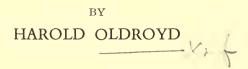
STUDIES OF AFRICAN ASILIDAE (DIPTERA) I. ASILIDAE OF THE CONGO BASIN





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STUDIES OF AFRICAN ASILIDAE (DIPTERA) I. ASILIDAE OF THE CONGO BASIN

By H. OLDROYD

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SYNOPSIS

A preliminary survey is made of the genera and species of Asilidae known to occur within the geographical area of the Congo Basin. Keys are given to tribes and genera : wherever possible, keys are given to all the African species of the genus (S. of the Sahara), but in some genera at this stage it is possible only to give keys to the species known to occur in the Congo Basin. A few big genera—notably *Ommatius* and *Neolaparus*—are so poorly known that keys are useless until a generic revision has been undertaken. Three new genera and 39 new species are described.

INTRODUCTION

THE present paper originated in an invitation to examine and report upon the Asilidae taken in the Garamba National Park, in the extreme north-east corner of the Congo Basin. At the time I had on loan a good deal of material from the Musée Royal de l'Afrique Central, in Tervuren, and from the Institut Royal des Sciences Naturelles de Belgique, and collections from Urundi and from Kasai made by my friend Monsieur Frans François. All the authorities concerned kindly agreed that I should write a combined report on their material, which should be published in the series of volumes of the Exploration du Parc National de la Garamba : Mission H. De Saeger.

Unfortunately changed circumstances made it impossible for the paper to appear in this form, and the Editors of the Bulletin of the British Museum (Natural History) generously agreed to accept it for publication in their series. The collections of the British Museum (Natural History) are rich in Asilidae from most parts of Africa except the Congo Basin, and the present collections fill a noticeable gap, in the centre of the African continent. It is hoped, therefore, that this preliminary

review will give some indication of what genera and species of Asilidae occur within the Congo Basin, and form convenient links with other papers on genera and species from other parts of Africa, south of the Sahara, which will be necessary before the Asilidae in the British Museum (Natural History) can be adequately identified.

The expression 'Congo Basin' is used loosely to cover the geographical area drained by the Congo River. Biologically the fauna of the north-eastern corner (where the Garamba National Park is situated) has links with that of Uganda and Kenya; species of the Congo Basin proper also extend into the rain forest areas of the Cameroons and southern Nigeria; while the fauna of the Katanga uplands is linked with the Rhodesia highlands rather than with the lowland rain forest.

ABBREVIATIONS

The following abbreviations are used for various institutions and collections: IPNC = Institut des Parcs Nationaux (du Congo), Brussels; MRAC = Musée royale de l'Afrique centrale, Brussels (Tervuren); IRSNB = Institut R. des Sciences naturelles de Belgique, Brussels; FJF = collection of Monsieur F. J. François, Brussels; BMNH = British Museum (Natural History), London; SMNS = Staatliches Museum für Naturkunde in Stuttgart (Lindner collection); MCZH = Museum of Comparative Zoology, Harvard; SAIMR = South African Institute for Medical Research, Johannesburg; MHNP = Muséum national d'Histoire naturelle, Paris. Collectors' names are given, except in the material from the Garamba National Park, where all specimens not otherwise credited were collected by H. De Saeger.

ASILIDAE

Asilidae (Robber Flies) are attractive to the collector of insects because they are usually easily seen, and because they behave in interesting ways. All known members of the family are predatory, adults of both sexes feeding by sucking the body-fluids of other insects, and occasionally of spiders. Most of them capture their prey in flight, grasping it with the fore legs, piercing it with the proboscis, and sucking it dry. They feed either in continued flight, or after first alighting with their prey.

That this habit is well-established in the evolution of the Asilidae is shown by the degree to which their structure is adapted to an aerial, predatory life. The head, in particular, is highly functional in its structure. All Asilidae have the eyes separated, though sometimes closely approximated at one point. A characteristic of the family, by which Asilidae may be distinguished from, say, Therevidae, is the way in which the vertex of the head is sunk beneath the level of the eyes. Another way of expressing this is to say that the eyes are raised above the level of the head, and this is a more significant description, indicating that the eyes are specially developed in this family.

The eyes are of such a shape that a considerable area of each eye faces forwards, and these areas are equipped with facets larger than the rest (Text-figs 56, 57, 60). The appearance is such as to suggest a special acuity of vision in a forward direction, correlated with the need to identify prey, and to catch it in the air. Compared with many other Diptera, the eyes of Asilidae are generally flattened in front, thus exposing a greater proportion of the facets to the front and relatively few to the side, though these lateral facets are strongly curved, and so command a wide field of view.

These characteristics of the eyes are most exaggerated in the tribe Xenomyzini, where the effect of large, flattened eyes and tiny frons and face is usually described as being 'goggle-eyed '.

The *legs* of Asilidae are developed for the pursuit of prey. In general, they are stout and strong, in contrast to the fragile legs of such aerial insects as Bombyliidae. Nearly always they are covered with hairs and strong bristles, which obviously fulfil a practical function in holding the struggling prey, and preventing it from injuring its captor; the characteristic 'moustache' of the Asilidae, a mass of bristles just above the base of the proboscis, similarly keeps the prey away from the eyes and antennae of the robber fly.

In a few genera the legs have acquired additional devices for grasping prey. The most advanced example is in the genus *Gonioscelis*, where the fore femur is expanded basally and its ventral surface is heavily armed with spines and bristles, which meet the tibia to form a crab-like prehensile organ (Text-fig. 49). In *Hoplopheromerus* the mid-femur and tibia are equipped with long, spiny bristles. Many genera have the hind femur swollen and strong, with its curved tibia closing firmly on to it. This development has occurred, obviously independently, in genera of all tribes, sometimes, as in *Hoplistomerus*, with the spines carried on warts or other processes of the femur.

One of the most enigmatic of such devices is the fore tibial spur of certain genera of Saropogonini, including *Saropogon* itself. This formed the basis of Hermann's group Acanthocnemini : a convenient device for quick identification, but an unsatisfactory basis for a classification, since we still cannot say whether this tibial spur is a practical device—thus showing similarity of habit, or of prey—or a functionless relict from some ancestor, and thus an indicator of affinity. Some species of *Microstylum (Mimoscolia)* have a similar spur and terminal process on the mid-tibia (Text-fig. 39).

The wings of Asilidae are of primary importance in the taxonomy of the family, though the range of venational pattern is comparatively restricted. A discal cell is always present, and an almost full set of longitudinal veins : $Sc, R_1, R_{2+3}, R_{4+5}, M_1, M_2, M_3, M_4, Cu_1, IA$. Variations in venational pattern arise from the meeting of adjacent veins before they reach the wing-margin, and thus the closure of certain cells, of which the most important is the marginal cell, lying between the veins R_1 and R_{2+3} (Text-fig. 69).

The marginal cell is closed, with a short terminal stalk, in Asilini, Ommatiini, Atomosiini, and most Laphriini; it is open, with veins R_1 and R_{2+3} reaching the wing-margin separately, in Leptogasterini, Saropogonini, Stichopogonini and Xenomyzini. In certain genera related to *Laphystia* this cell is normally open, though vein R_2+3 has a characteristic retrograde curve. These genera comprise Hermann's group Prytaniinae and Hull's tribe Laphystiini, transitional between the old subfamilies of Laphriinae and Dasypogoninae. In most respects they are most closely related to Laphriini, and are here treated as belonging to that tribe.

It is generally assumed that open cells are a more primitive condition, and closure of cells is a specialization ; though of course this specialization has occurred independently in many different lines of evolution. The most generalized venation occurs in the Leptogasterini, where often all the cells are open, including the anal cell. The last is particularly variable, being sometimes divergently open, almost as in some Nematocera, but sometimes closed far from the wing-margin. Leptogasterini have lost the alula, and the shape of the wing and of individual forks and cells show clearly that being generalized cannot necessarily be equated with being primitive.

Leaving aside the Leptogasterini, which are a peripheral group, whether primitive or advanced, the central group of the family is the Saropogonini with Stichopogonini and Xenomyzini as specialized offshoots. Saropogonini include a diversity of genera, all of which have an open marginal cell, even though other venational specializations occur, e.g. in *Microstylum*.

The generally robust structure of Laphriini extends to the wings, where additional strength is often provided by the closure of both the first and fourth posterior cells (Text-figs 18-20). These must give considerable rigidity along the posterior area of the wing. On the other hand the actual wing margin, which in Asilidae is normally sclerotized into an 'ambient vein', is membranous in a number of genera, especially in *Laphystia* and related genera.

Among Asilini the conspicuous peculiarity lies in the genera *Promachus*, *Alcimus*, *Philodicus* and *Apoclea*, where an additional vein unites the fork of R_{4+5} with the stem of R_{2+3} , producing three submarginal cells. Since Asilini are clearly an advanced tribe, which at specific level show signs of recent evolution, it would be reasonable to visualize this additional vein as a new structure, perhaps giving additional rigidity to the radial field of the wing. However, many Brachycera in different families have a stump vein on the radial fork, and sometimes a complete cross-vein : for example, some Bombyliidae, including the entire tribe Exoprosopini.

There has therefore been a temptation to look upon three submarginal cells as a primitive condition in Brachycera, from which the more usual two submarginal cells are derived by reduction. Shannon and Bromley (1924) regarded the *Promachus*-group of genera as evidence that the proper numbering of the branches of the radial sector should be : R_1 , R_2 , R_{3+4} , R_5 . In this way Shannon & Bromley accepted it as axiomatic that the additional vein in these genera is a true vein, one of the ancestral complement.

In fact, supernumerary veins often occur in Brachycera. In Nemestrinidae they are a regular feature of certain genera. In Syrphidae the 'spurious vein' is a family characteristic. Among Asilidae it is quite common to find supernumerary cross-veins, sometimes only in one wing. The small anterior cross-vein (r-m) is often duplicated. There is evidence that such veins appear during the pupal period, and are the result of sclerotization of a fold. On this interpretation it is suggested that the stump vein from the radial fork, when this is present, and even the complete vein in *Promachus* and its allied, are no more than this, and give no indication of phylogeny.

The thorax and abdomen of Asilidae show no remarkable features. The abdomen varies from slender and elongate in Leptogasterini, most Asilini and many other

genera, to the extremely squat abdomen of genera such as *Sisyrnodytes*, in which the abdomen is short, broad, flattened, and bee-like in form.

With few exceptions, the *genitalia* of both sexes are exposed, and readily examined for purposes of classification. *Female terminalia* may be simple, or they may take the form of an ovipositor. Although an ovipositor may appear highly characteristic it is an adaptive character, suited to the requirements of egg-laying. The larvae of Asilidae live either in soil or in wood, but the eggs are laid in a variety of special sites. They may be simply dropped on to the ground, in which case the ovipositor is of very simple, lamellate structure. Many eggs are concealed in flowers, leaf-axils, or even inside a slit cut into the tissue of a plant : it seems that the object is concealment and protection of the egg, and possibly of the first instar larva. Many of the more striking ovipositors, which are most frequent in the advanced tribe Asilini, are adapted to the circumstances of oviposition. The manner of oviposition may be quite different in related genera, or even within a single genus, and so ovipositors are unreliable indicators of relationships.

Male genitalia present a complicated problem. They are constructed mainly from the ninth segment. The ninth tergite, or *epandrium*, is sometimes entire, sometimes split into the *superior forceps*. From the ninth sternite arises a pair of *inferior forceps* (gonopods) which often appear double because each bears on its inner surface an accessory lobe, the *clasper*. Within the two claspers appear the *aedeagus* and its two *parameres*. The basic pattern is thus that of a trifid median structure, flanked by three pairs of lobes, and topped (dorsally) by a median pad formed from the paired *anal lamellae* (proctiger).

The variations upon this basic structure are extensive, and are made more confusing by partial or complete *inversion*. Thus in Laphriini the typical genital structure is boat-shaped, the apparent hull of the boat consisting of the undivided ninth tergite (*epandrium*), which has become inverted and appears to house the other (ventral) appendages (Text-figs 3-36).

The problem of *rotation* of male genitalia in Diptera, leading to inversion, has received undue prominence in textbooks, more especially in regard to muscoid flies. Rotation may be a source of confusion in comparative morphology, but—at least in Asilidae—it is usually possible to distinguish between the true dorsal aspect, with the lamellae, and the true ventral aspect, with the gonopods and claspers. As an indication of relationships, rotation is an unsafe guide. In many genera rotation occurs during mating : i.e. the genitalia of the two sexes are engaged, and then the male changes position, twisting the genitalia in the process. This rotation may be partial or total, depending upon the mating attitudes, and may or may not persist during later life, or after death. Consequently no attention should be paid to rotation *per se*, beyond ensuring that the correct orientation of the parts is understood before they are compared with others.

The specific identification of Asilidae is much more difficult than is generally thought, and possibly for this reason this attractive family has not been as extensively studied as, say Syrphidae. No large scale revision of African Asilidae has ever appeared, and in every genus the student is faced with a dilemma : if few species are known, then material is scarce, and comparison difficult ; if material is

abundant, as in *Ommatius* and *Neolaparus*, the variation is so great that specific identification is not possible until the whole genus has been revised.

Substantial progress in knowledge of African Asilidae will come only from complete revisions of successive genera.

THE ASILIDAE OF THE CONGO BASIN

The collections of the British Museum (Natural History) include much material from Africa south of the Sahara, but for historical reasons little of this comes from the area of the Congo Basin. The writing of the present paper seemed to provide an opportunity to review the Asilidae of this larger and important natural region of central Africa, which would be complementary to later studies that it was hoped to make of Asilidae from the rest of the Ethiopian Region.

Unfortunately as the work progressed it became evident that a number of genera were insufficiently known for a definitive review to be possible. The outstanding example is the genus *Neolaparus*, flies of deceptively simple appearance which so far have resisted all attempts at a classification. Only a thorough study of all the African species, with an attempt to find new taxonomic characters, will make it possible to rationalize this genus. *Ommatius* is more tractable, but there is an abundance of species, many of which are clearly of wide distribution. These and several other genera must be revised for the entire region before it will be possible to deal adequately with any faunistic survey.

The material described in the present paper, therefore, consists of the collections of the Mission H. De Saeger from the Parc National Du Garamba, together with such other material as could be handled satisfactorily at the same time. Whenever possible I have given a key to species, from this collection, or from the Congo Basin, and in some genera a key to all the known species from the Ethiopian Region.

One fact that clearly emerges from this study is that there is no fauna of Asilidae that is characteristic of the Congo Basin, or even of the equatorial forest belt as a whole. The distribution of Asilidae resembles that of Tabanidae : both families seem to flourish best in savanna country, with an open, mixed vegetation, which provides a multiplicity of habitats.

There are interesting parallels between the tribe Laphriini of the Asilidae and the genus *Chrysops* of the Tabanidae. *Chrysops* spp. are known as 'deer flies' in North America because their typical habitat is the open woodland in which deer abound, and Laphriini, with their wood-living larvae, are characteristic of this habitat. *Chrysops* has invaded the high forest by way of the tree-canopy, coming down to ground level where the canopy is broken by rivers, by clearings, or by the outcropping of rocky or mountainous areas which bring ground level up to the canopy of the surrounding forest. It would be interesting to discover whether the high canopy of the Congo Basin also supports a large population of Laphriini, which fly among the tree-tops and prey upon the Hymenoptera and other insects feeding on the flowers of the forest trees.

The Parc National du Garamba is not situated in high forest, and has not much open woodland. It is mostly park savanna, i.e. predominantly grassland with scattered trees (Exploration du Parc National du Garamba ; Afdelung Introduction, p. IOI ; pls. III-XII). It is noteworthy that Laphriini are poorly represented within the confines of the Parc, though they are numerous among collections from elsewhere in the Congo Basin.

The Asilidae of the Parc National du Garamba are mainly Saropogonini, Stichopogonini, Xenomyzini and Asilini, and belong to genera which have a wide distribution throughout the savanna areas of Africa. It is these genera (e.g. *Neolaparus, Ommatius*) that cannot be comprehensively treated in the present paper, because the Garamba fauna is a small and unrepresentative sample of a very extensive and difficult range of species.

KEY TO THE TRIBES OF AFRICAN ASILIDAE¹

I	Marginal cell of the wing open
	Marginal cell of the wing closed 6
2	Pulvilli absent. Very narrow, elongate flies LEPTOGASTERINI (p. 215)
_	Pulvilli nearly always present; if absent, flies of different shape
3	Prosternum isolated, and surrounded by membrane (between front coxae). Female
	with ninth tergite divided into spine-bearing plates (acanthophorites)
	SAROPOGONINI (p. 257)
_	Prosternum complete, with little or no membranous area
4	Vertex of head saddle-shaped. Dusty grey flies, living in sand or on rocks. (Text-
	figs 53, 56, 57, 60)
_	Vertex not saddle-shaped
5	Flies with small face and frons and very large 'goggle' eyes. XENOMYZINI (p. 285)
_	Head and eyes not of this shape . some LAPHRIINI (LAPHYSTIINI) (p. 224)
6	Antennae blunt or club-shaped. Often with mesopleural bristles
—	Antennae with slender arista, sometimes feathered
7	Vein M_3 straight and parallel with outer vein of discal cell. Small flies, rather like
	sawflies ATOMOSIINI (p. 257)
-	Vein M_3 curved, not parallel with outer margin of discal cell . LAPHRIINI (p. 224)
8	Arista of antennae feathered
_	Arista of antennae bare

Tribe LEPTOGASTERINI

Members of this tribe have a characteristic habitus, which sets them apart from nearly all other Asilidae. The abdomen is long and slender, usually slightly clubbed apically. The wings are generally narrow, with the anal lobe and alula evanescent, and with a simplicity of venation in which even the anal cell is often wide open. The legs are slender and elongate, especially the hind pair, of which the femora and tibiae may be clavate. Pulvilli are always absent, and the empodium may be absent or greatly reduced. The metanotum and postmetacoxal area are flattened obliquely, in such a way that the coxae are pushed forwards, and the base of the abdomen raised, contributing to what has been called the ' agrionid ' appearance of these flies. The thorax of many Leptogasterini is further distorted by having the dorsum compressed into a hump, and by the development of a pair of processes on the mesonotum which overlap the pronotum ; in the genus *Euscelidia* a process of the pronotum lies between them.

¹ For a fuller account of tribal classification, and a bibliography see Oldroyd (1963).

To a great extent these features of Leptogasterini are clearly adaptive. The tarsi, for instance, are adapted for curling securely round a grass stem, in which process they are actively assisted by the long, curved claws, and by the loss of pulvilli.

Dipterists who have specially studied Leptogasterini have been led to emphasize the differences between these and all other Asilidae. Janssens (1954:114) stated an extreme view: 'Je considère . . . qu'il y avait lieu peut-être d'instituer pour *Leptogaster* et quelques voisins une famille qui formera avec les Asilidae une superfamilie ASILOIDEA'. Martin (1968) developed this view at some length, but Oldroyd (1969) examined Martin's argument in detail, and endorsed the view of Hull (1962:296) that: 'All these characters are collectively found in Leptogasterinae, but are singly shared with other asilids'.

The subdivision of Leptogasterini into genera is also unexpectedly difficult. The key given by Oldroyd (1963: 8) is unsatisfactory in some particulars, and fails to locate generically any species with the following combination of characters: occiput with fine hairs only, without bristles; no bifid pronotal process; and no swollen or plumate hind legs. Such specimens might be regarded either as *Leptogaster* without occipital bristles or as *Euscelidia* without the pronotal process; sometimes the general impression is of the former, sometimes of the latter.

In the present paper the genera are interpreted as in Janssens' papers, and all species which lack the pronotal process, and have the anal cell widely open, are classed as *Leptogaster*, whether or not they have strong occipital bristles.

Key to the African Genera of Leptogasterini

I	Prothorax with a bifid process, which arises between the two processes of the meso-
	notum
-	Prothorax without any process between the two processes of the mesonotum 2
2	Legs swollen or ornamented
	Legs neither swollen nor ornamented
3	Hind femora and tibiae strongly swollen, with thick, erect hairs
	LASIOCNEMUS Loew (p. 223)
	Hind femora not strongly swollen, but distinctly elongate. Hind tibiae and tarsi
	with conspicuous plumes DOLICHOSCIUS Janssens (p. 223)
4	Anal cell of the wing open. Mostly small, rather sombre flies
	LEPTOGASTER Meigen (p. 216)
	Anal cell of the wing closed and stalked. Mostly large, or very large, brightly
	coloured flies

LEPTOGASTER Meigen

Leptogaster Meigen, 1803: 269. Type-species: Asilus cylindricus De Geer, 1776, monotypic as Asilus tipuloides Fabricius, 1775.

Gonypes Latreille, 1805 : 309. Type-species : Asilus cylindricus De Geer, 1776, monotypic as Asilus tipuloides Fabricius, 1775

Very few species of *Leptogaster* had been recorded from the Congo Basin until Janssens described twenty-five species in a series of papers (1952-57). Many of these are known from unique specimens, and only a study of much more extensive

material will make it possible to indicate the extent of intraspecific variation, or the distribution of species within the area. In the meantime the following key, compiled from the published descriptions, is offered as a guide to provisional identification. In addition to Janssens' species there are *L. ludens* Curran (1927 : 1) —a single female from Banana, at the Congo mouth—*L. bicingulata* Bezzi (1905 : 279) described from Eritrea and recorded by Janssens from Kitega ; and *L. pictipennis* Loew (1857 : 353) described from S. Africa, and also recorded by Janssens from Bururi.

KEY TO THE SPECIES OF LEPTOGASTER DESCRIBED BY JANSSENS

I	Mesonotum matt, sometimes with pattern of tomentum
	Mesonotum shining, or with shining stripes
2	Empodium very small, or absent. Arista as long as all three antennal segments
	together
	(both from Eala, and difficult to separate)
_	Empodium distinct, usually about half as long as claws
3	Mesonotum matt brown or black, with or without indistinct pattern. Hind femora
č	with darker tip or band
_	Mesonotum red or brown, with three darker stripes. Hind femora uniform
4	Moustache composed of eight long, black hairs. Occipital bristles unusually strong
•	<i>melanomystax</i> , 1954 : 133
_	
5	Moustache pale, occipital bristles weak
_	Wings either clear, or almost uniformly tinted, with <i>tip</i> sometimes darker 6
6	Hind femora gradually darkened towards tip. Wings smoky plebeja, 1957:9
_	Hind femora with distinct subapical dark ring
7	Face and proboscis dark. Abdomen pitch-black evanescens, 1954 : 127
_	Face grey and proboscis red-brown. Abdomen olive-grey with grey pubescence,
	especially posteriorly
8	Empodium half as long as claws. Vein R_{2+3} curved forwards at tip 9
_	Empodium tiny, and vein R_{2+3} curved backwards at tip velutina, 1954 : 127
9	Occiput with a row of unusually stiff bristles. Body generally covered with silky
	grey or whitish hairs
_	Occiput with a few dark hairs. Body generally dark, without silky appearance
	<i>rufescens</i> , 1954 : 125 (p. 218)
0	Hind femora uniformly coloured
-	Hind femora banded, striped, or merely becoming progressively darker towards tip 14
II	Wings clear
-	Wings more or less tinted
[2	Hind tibiae thickest in middle, tapering towards base and tip pallipes, 1953 : 9 (p. 218)
_	Hind tibiae thickest at tip. Thorax with two strong bristles posteriorly
	rufa , 1953 : 9, schoutedeni , 1954 : 401
[3	Thorax black
-	Thorax clear, translucent yellow-brown pellucida, 1954 : 132
[4	Mesonotum with dark pattern of stripes or spots
-	Mesonotum without pattern, though sometimes paler at sides, or with a <i>bare</i> stripe I7
τ5	Mesonotum with silvery spots of tomentum, and also with numerous small bare spots
	hermelina, 1954 : 130
-	Mesonotum without spots
16	Mesonotum brilliant yellow, with triple black stripe. Hind femora yellow with
	indistinct band

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-	Mesonotum dark brown, with a darker stripe. Hind femora reddish brown with
	dark band
17	Wings brown at tip. Mesonotum black with grey tomentum, which leaves a bare
	stripe
-	Wings not brown at tip, clear, or uniformly tinted
18	Bronze and sepia species, hind femora with longitudinal stripe . upembana, 1954: 128
-	Without bronze colouration or longitudinal stripe on femora
19	Hind femora and tibiae with a strongly marked dark ring near tip 20
-	Hind femora only indistinctly darker towards tip
20	Mesonotum black with yellow tomentum, which becomes silvery on pleura. A
	robust species of 10 mm. Hind femora conspicuously knobbed, and with two
	rows of black spines ventrally penicillata, 1954 : 130 (p. 218)
-	Mesonotum red, with weak yellowish tomentum on pleura. A fragile species of
	6 mm. Hind femora not conspicuously knobbed, and without ventral spines
	<i>stichosoma</i> , 1957 : 6
21	1 0
-	Empodium more than half as long as claws
22	Hind basitarsus as long as preceding four tarsomeres together tarsalis, 1954 : 29 (p. 218)
-	Hind basitarsus normal basilewskyi, 1955 : 304
1	The following species were represented in the collections from the Coromba

National Park :

Leptogaster pallipes Janssens

Leptogaster pallipes Janssens, 1953:9.

GARAMBA NATIONAL PARK : P.N.G., 1849, 1 3, 1 2, 31.v.1951 (J. Verschuren), 3612, Iso III, 1 2, ii.vi. 1952 (IPNC).

Leptogaster penicillata Janssens

Leptogaster penicillata Janssens, 1954 : 130.

GARAMBA NATIONAL PARK : P.N.G., 195, 1/c/2^{'''}, 1 Q, 3.1.1950 ; 1276, III/gd/2, 1 J, 19.ii.1951 ; 1334, II/gd/4, 1 Q, 6.iii.1951 ; 2861, II/hd/4, 1 Q, 6.xii.1951 ; 2944, 1 ex., II/gd/4, 27.xii.1951 ; 3077, II/gd/10, 1 ex., 30.i.1952 (IPNC).

Leptogaster tarsalis Janssens

Leptogaster tarsalis Janssens, 1953: 129.

The following three specimens may probably be assigned to this species, though the third specimen, a female, is larger and more robust than the others. All three show a characteristic narrowing of the second submarginal cell, veins R_4 and R_5 both being curved and approximated at the wing-tip.

GARAMBA NATIONAL PARK : P.N.G., 199, I/a/3, 1 3, 7.ix.1950 ; 2991, II/fd/17, 1 ex., 3.i.1952 ; 529, Akam., 1 9, 19.v.1950 (IPNC).

Leptogaster rufescens Janssens

Leptogaster rufescens Janssens, 1954 : 125.

GARAMBA NATIONAL PARK : P.N.G., 1474, II/ge/2, 1 Q, 31.iii.1951 ; 2102, II/fd/3, 1 Q, 16.vii.1951 ; 2107, II/hd/4, 1 Q, 17.viii.1951, 2 ex. ; 2160, II/gd/11,

ASILIDAE OF THE CONGO BASIN

1 δ, 28.vii.1951 ; 2223, II/fd/4, 1 δ, 8.viii.1951 ; 3488, Inimvua, 1 ♀, 20.v.1952 ; 3606, Mt Tungu (S), 1 δ, 9.vi.1952 ; 3964, II/gd/4, 1 δ, 1 ♀, 23.viii.1952 (IPNC).

AMMOPHILOMIMA Enderlein

Ammophilomima Enderlein, 1914 : 155. Type-species : Ammophilomima imitatrix Enderlein, 1914, by original designation.

? Lagynogaster Hermann, 1917 : 12. Type-species : Lagynogaster fuliginosa Hermann, 1917, by original designation.

In his revision of Ammophilomima, Janssens (1953b: I-I2) discussed the supposed differences between Enderlein's genus Ammophilomima and Hermann's Lagynogaster, and concluded that probably these two '. . ne sont qu'un seul et même genre'. Janssens described two species from the collections of the Staatssammlung in Munich, where they bore manuscript names given them by Hermann, but which had never been published.

Although *eumenoides* was based upon a specimen from Malawi, and *imitatrix* from the Cameroons, Janssens records all the species in his key from the region of Eala, in the Congo Basin. Here is a translation of his key :

Key to Species of AMMOPHILOMIMA

I	Hind femora encircled with a yellow band .						•		2
-	Hind femora not encircled with a yellow band								7
2	Hind tibiae with a yellow apex								3
-	Hind tibiae without any yellow apex .								5
3	Stigma filling the whole of the subcostal cell								4
-	Stigma confined to tip of subcostal vein .					imi	tatrix	Ende	rlein
4	Empodium longer than half length of claws.	Wing	s bro	wn.	Hind	legs l	olack a	nd	
	yellow					str	aelen	i Jans	sens
-	Empodium less than half length of claws. Hin								
	Wings hyaline				•	evan	escen	s Jans	sens
5	Hind basitarus largely bistre								6
-	Hind basitarus entirely brown				. 1	ghesq	uiere	i Jans	sens
6	Mesonotum unicolorous				aeg	uino	ctiali:	s Jans	sens
	Mesonotum bearing a large black spot in the sh	nape o	f a tr	ident		basile	ewsky	i Jans	sens
7	Antennae uniformly reddish yellow			eut					
	Antennae darker				5	auriț	oennis ntand	Jans	sens
	Antennae darker	•	•	•	• ک	mo	ntand	Jans	sens

The collections from the Garamba National Park contained specimens of A. eumenoides.

Ammophilomima eumenoides Janssens

Ammophilomina eumenoides Janssens, 1953: 4.

GARAMBA NATIONAL PARK : P.N.G., 3311, PPk. 73/d/9, 2 9, 8.iv.52 ; 3623, Iso II/2, 1 9, 18.vi.1952 (IPNC).

EUSCELIDIA Westwood

Euscelidia Westwood, 1849: 232. Type-species : Euscelidia rapax Westwood, monotypic.

Species of *Euscelidia* are usually recognizable by their general appearance, as robust and shining Leptogasterines. The type-species and a few others have hairy hind legs, which could lead to confusion with *Lasiocnemus*, but the existence of a vertical process of the pronotum projecting between the two processes of the mesonotum is diagnostic.

About eight or nine species of *Euscelidia* have been recorded from the Congo Basin, most of them described in various papers by Janssens. The differences in colour and pattern are more subtle than in *Leptogaster*, and it is not practicable to attempt a key compiled from descriptions. Only a detailed study of species both in the Congo Basin and outside it, with comparisons of genitalia, will make such a key possible. Meanwhile species must be named by direct comparison with Janssen's descriptions and figures.

The collection from the Garamba National Park contained two of Janssens species and two others that are clearly new.

Euscelidia bicolor Janssens

Euscelidia bicolor Janssens, 1954: 123.

GARAMBA NATIONAL PARK : P.N.G., 3844, Mt Moyo, 2 3, 29. vii. 52 (IPNC).

The wings are more heavily infuscated than is indicated in the original description.

Euscelidia festiva Janssens

Euscelidia festiva Janssens, 1954: 123.

GARAMBA NATIONAL PARK : P.N.G., 529, Akam, I 3, 19.v.1950 ; 848, I/b/2, 1 9, 27.ix.50 (G. Demoulin) ; 895, Napokomweli, I 3, I 9, 18.x.50 (G. Demoulin) ; 3612, Iso III, I 3, 11.xi.52 ; 3642, Iso/II/11, I ex., 16.vi.1952 (IPNC).

Euscelidia dorata sp. n.

(Text-fig. 1)

A yellow-brown species, greatly resembling *Leptogaster rufescens* Janssens, but with a distinct pronotal process, and without any strong occipital bristles. Its nearest relative among Janssens' species of *Euscelidia* is *E. bicolor*, from which *dorata* differs in having the thorax yellow-brown, tomented, and a very sparse moustache.

 \diamond Head. Frons with dense golden brown tomentum ; ocellar tubercle black, with sparse golden tomentum, and no ocellar bristles. Face tomented brownish, silvery when seen obliquely ; almost plane, with a tiny tubercle on mouth-margin, which bears a sparse moustache of about four brownish bristles. Proboscis and palpi clear brown. Occiput with dense tomentum, grey-brown, with no bristles at all, and only sparse, short, yellowish brown hairs. Antennae brown with black hairs ; third segment same length as arista, each equal to sum of first two segments.

Thorax yellow-brown both in ground colour and in tomentum. Mesonotum quite strongly humped, tomented, without distinct pattern, but with an indistinct yellowish median stripe. Bristles yellow (almost all broken off in specimens available) : I notopleural, I intra-alar,

I ? postalar : fine, short, yellow hairs disposed in humeral areas and along lines of dorsocentrals. Scutellum with a distinct discal furrow, yellowish brown in ground colour, with whitish tomentum, short yellow hairs, and no discal bristles. Pleura yellow-brown with dense whitish tomentum and only sparse, fine, yellow hairs.

Abdomen. First five segments tubular, yellow-brown, shining through thin yellow tomentum, and with fine black hairs ; sixth and following segments more clavate, dark brown, with hairs longer and mostly yellow ; venter similar, but more yellowish and with yellow hairs. Genitalia (Text-fig. 1) mahogany-brown.

Legs clear yellow-brown : only tips of tarsi and of hind tibiae rather deeper brown. Hind femora and tibiae distinctly clavate. All legs clothed with rather long hairs, which are mostly clear, but may appear black when silhouetted against the light.

Wings almost clear of pigment, but extensively covered with microtrichiae, especially in apical half. Halteres with yellow stalk and brownish knob.

Length of body 10 mm ; of wing 7 mm.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 2644, II/fd/15, 22.ix.51 (IPNC).

Paratypes. GARAMBA NATIONAL PARK : 208, 1/b/1, 1 \bigcirc , 15.ii.1950 (G. Demoulin); 998, II/d/6, 1 ?, 21.xii.50 (J. Verschuren); 949, II/c/, 1 &, 21.xii.50 (J. Verschuren); 1260, II/fc/6ar, 1 &, 16.ii.1951 (J. Verschuren); 1272, II/ed/14, 1 \bigcirc , 17.ii.1951; 1576, II/fb/4, 1 ?, 19.iv.1951 (J. Verschuren); 1633, II/ee/7, 6 \bigcirc , 27.iv.1961 (J. Verschuren); 2024, II/gd/14, 3 \bigcirc , 30.vi.1951; 2051, II/ge/6, 1 \bigcirc , 10.vii.1951; 2071, II/gd/11, 1 &, 12.vii.1951; 2464, II/fd/15, 1 \bigcirc , 12.ix.1951; 2780, II/gd/4, 1 &, 23.ix.1951; 2935, II/fd/10. 1 \bigcirc , 20.xii.1951; 2841, II/fc/6, $2 \bigcirc$, 26.xii.1951 (J. Verschuren) (IPNC).

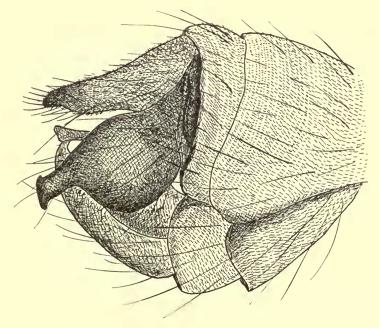


FIG. I. Euscelidia dorata. Male genitalia.

Euscelidia moyoensis sp. n.

(Text-fig. 2)

A species with shining black thorax, and legs extensively marked in black, distinguished from the other species known to me by the distinct black band at the extreme tip of the hind femora. From *E. lucida* Oldroyd it differs in the much less evident pattern of tomentum on the thorax, the more prominent silky hairs of the anterior sternopleuron, and the more abundant pale hairs of the moustache. It also has close affinities with *E. datis* (Walk.) from Sierra Leone, but cannot be compared in great detail because the unique type of the latter is too badly damaged : the fore and middle legs of *moyoensis* seem to be much more heavily infuscated.

 $rac{S}$ Head. Frons and face with golden tomentum ; moustache a row of 15–20 white bristles on mouth-margin : no other facial or frontal hairs. Antennae (broken), palpi and proboscis black, with black hairs. Occiput with golden tomentum and fine yellow hairs.

Thorax. Mesonotum mostly shining black, with yellow tomentum only at extreme sides, and particularly anteriorly, and on humeral slopes ; long, golden hairs lie vertically, and long, yellowish white hairs arise from tomented areas ; rest of dorsum with short, black hairs. Scutellum covered with yellowish white tomentum, with erect, curved yellowish hairs on disc and on margin. Pronotum, including median lobe and twin lobes of mesonotum, covered with whitish tomentum, which also covers pleura. Mesopleuron, pteropleuron and anterior part of sternopleuron also with conspicuous tufts of long, snow-white hairs.

Abdomen in ground colour black, with yellow basally on third and fourth segments, the whole covered with whitish tomentum. Hairs mostly white, some black dorsally, longer laterally and on sternites, which are a little more yellow than tergites. Male genitalia (Text-fig. 2) black.

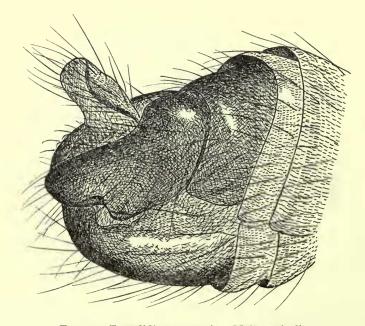


FIG. 2. Euscelidia moyoensis. Male genitalia.

Legs. A pattern of whitish yellow, deep honey-yellow, and black-brown. Black-brown covers extreme tips of fore and hind femora, most of mid femora except bases, a median ventral patch on inner face of each hind femur, anterior and posterior stripes on all tibiae, tips of all basitarsi, and all other tarsomeres. Hind femora with narrow, whitish yellow stem, deep yellow, elongate knob, and small, apical, black-brown band. All basitarsi conspicuously whitish yellow, except for extreme tip, which is black-brown. White bristles on tibiae, but tarsal bristles black.

Wings. Uniformly, but faintly smoky. Halteres red-brown.

Length of body 12 mm ; of wing 8 mm.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 3844, Mt Moyo, 29.vii.52 (IPNC).

DOLICHOSCIUS Janssens

Dolichoscius Janssens, 1953 : 2. Type-species : Dolichoscius francoisi Janssens, 1953, monotypic.

Janssens has described two species of *Dolichoscius* in two separate papers. He clearly intended the type-species to be *longipes*, from the Upemba National Park, but unfortunately this paper (1954) did not appear until after the description of *francoisi* from Urundi, which becomes the type-species by monotypy.

Dolichoscius francoisi Janssens, 1953 : 2, Urundi.

Dolichoscius longipes Janssens, 1954 : 120, Upemba.

LASIOCNEMUS Loew

Lasiocnemus Loew, 1951: 2. Type-species: Lasiocnemus obscuripennis Loew, 1851, by original designation.

Although Janssens (1952: 6-10) records several species of *Lasiocnemus* from the Congo Basin, including such species as *L. lugens* Loew, which were originally described from distant parts of Africa, there were no species among the material from the Upemba National Park (Janssens, 1954), and none in the collections from Garamba.

For the sake of completeness in this review, therefore, I can only quote Janssens' key to the species recorded by him from the Congo Basin.

Key to Species of	LASIOCNEMUS FRO	om the Congo Basin
-------------------	-----------------	--------------------

I	Wings clear, except for a stigma at t	ip o	f subco	stal v	vein			hyaliį	oenni	s Jans	sens
	Wings smoky							•			2
2	Wings uniformly smoky		•					heri	nann	i Jans	sens
-	Wings with some kind of pattern								•		3
3	Wings with separated clear flecks										4
-	Wings with a hyaline crossband.							•			6
4	Legs uniformly black, or dark brown	ı.									5
-	Legs clear brown, with brown markin	igs o	on hind	femo	ra and	l tibia	. (`	Wings	with	two	
	large clear spots which almost form	n a	crossba	nd)							
			fa	scipe	ennis	Enge	1 & C1	athber	tson,	1939 :	185
5	Face with brown pubescence ; halt	eres	black	; em	podiu	m equ	ual to	three	-quar	ters	
	of length of claws					•	lu	gens]	Loew	1857 :	353

- 6 Transverse clear band of wings in the form of an elongate triangle. Pubescence of hind tibiae grey apically griseicinctipes Speiser, 1913 : 141
- Transverse clear band of wings irregular. Pubescence of hind tibiae reddish apically.
 Empodium not half as long as claws
 anthracinus Janssens, 1952:9

Tribe LAPHRIINI

More than one third of the species recorded in the present paper belong to the tribe Laphriini. Although this proportion is exaggerated by the fact that certain big genera of other tribes—notably *Neolaparus* and *Ommatius*—cannot at present be reported upon so fully, yet the abundance of Laphriini underlines the fact that these genera flourish among trees. Many, perhaps most of them, spend their larval life in the stumps of fallen logs, often in the burrows made by wood-boring beetles and carpenter-bees.

Most Laphriini are distinctive in appearance, broadly built, often with the abdomen basally constricted; wings strong, with stout veins, marginal and fifth posterior cells closed; legs often stout, with inflated femora and curved tibiae; and antennae stout, often clavate. The body surface is toughly sclerotized, and often punctate, giving the appearance of a strong, aggressive insect, with more than a superficial resemblance to a wasp or a bee.

Laphriini can usually be recognized by the combination of closed marginal cell and styliform antennae, in contrast to the aristiform antennae of the Asilini, and the open marginal cell of other tribes. It has been explained above (Introduction) that the present concept of Laphriini includes not only the tribes Andrenosomini and Ctenotini of Hull (1962), but also the more controversial ' Prytaniinae ' of Hermann, the tribe Laphystiini of Hull and others. On the other hand the Atomosiini, apparently only slightly separated by the small details of wing-venation, sustain this distinction on a world scale, though they are scarce in tropical Africa, and only one species is included in the present paper (see below).

KEY TO GENERA OF AFRICAN LAPHRIINI

I	Proboscis flattened into a blade like a paper-knife, with its edges dorsal and ventral 2
-	Proboscis triangular in cross-section, with a flat surface ventrally. Sometimes
	curved upwards into a sickle-shape
2	Face gently swollen up to base of antennal tubercle. Large, hairy, bee-like flies
	DASYLLINA Bromley (p. 231)
-	Face abruptly swollen into a knob that occupies only lower half
3	Antennae conspicuously elongate. Abdomen constricted between segments 2-3,
	giving a wasp-like appearance. Margin of scutellum with very short hairs, or
	none at all. Hind femora with tuberculate spines as in <i>Hoplistomerus</i>
	STORTHYNGOMERUS Hermann (p. 231)
-	Antennae not conspicuously elongate ; third segment often rather plump. Abdo-
	men seldom constricted, and then it is between 1–2 segments. Margin of scutellum
	usually with long hairs or fine bristles
4	Costa of wing not thickened as far as tip of vein R_5 , and entire hind margin mem-
	branous. First posterior cell closed and stalked
_	Costa of wing thickened at least as far as vein M_4 , or beyond 9

5	Claws blunt at tip. Vein M_2 of wing nearly always cut short before reaching wing- margin. Palpi with only one segment (Text-fig. 25). Lower margin of occiput produced into a rim
-	Claws pointed at tip. Vein M_2 of wing reaching margin, or almost so. Palpi with two segments (Text-fig. 24). Lower margin of occiput not produced 6
6	Hind femora very strongly swollen. Third antennal segment hairy above LAXENECERA Macquart (p. 235)
_	Hind femora not strongly swollen. Third antennal segment bare above 7
7	Scutellum with long marginal bristles. Face smoothly rounded, with a moustache
'	of strong bristles extending up to antennae. Third antennal segment clavate,
	with two-segmented style NUSA Walker (DASYTHRIX Loew) (p. 243)
_	Scutellum without marginal bristles
8	Abdomen with a clump of strong bristles on first segment only. Moustache consist-
	ing of a row of strong bristles along mouth margin, and a mass of soft, silky hairs
	above these PERASIS Hermann (SAUCROPOGON Hull) (p. 244)
-	Abdomen with strong lateral bristles on several other segments beyond first.
	Moustache consisting of hairs and bristles mingled. Often no pulvilli
	GLYPHOTRICLIS Hermann
9	Pulvilli absent ; claws long and slender. Vein M_3 parallel to outer end of discal
	cell, and often in line with it
-	Pulvilli present
10	Costa extends round hind margin of wing at most as far as vein $Cu + IA$: axillary
	cell has no vein along its outer margin<
11 —	
12	
12	Hind femora slenderLAPHYSTIA LoewHind femora distinctly swollenGERROLASIUS Hermann
13	Hind femora conspicuously swollen
- 13	Hind femora not conspicuously swollen
14	Hind femora with strong, spine-bearing tubercles ventrally. Hind basitarus as long
- 7	as next three segments together. Proboscis as long as face, which is not swollen
	HOPLISTOMERUS Macquart (p. 246)
_	Hind femora swollen, and with bristles, but not arising from tubercles. Hind
	basitarsus not much longer than one segment. Proboscis shorter than face,
	which is distinctly swollen
15	Palpi large and inflated, ovoid AFROMELITTODES Oldroyd & van Bruggen
-	Palpi pointed at tip some LAPHYSTIA Loew
16	Lower occiput with a backwardly-projecting flange. Palpi with only a single
	segment (Ctenotini of Hull, 1962)
-	Lower occiput rounded, sometimes slightly bulbous, but never with a flange. Palpi
	with two segments
17	Claws noticeably blunt at tip
-	Claws pointed. Abdomen club-shaped, becoming broader posteriorly. Legs elongate, especially hind pair
- 8	elongate, especially hind pair \dots
18	mostly obscurred by scaly hairs. Third antennal segment short, club-shaped,
	little longer than first two segments together
_	Vein M_2 complete. Ground colour of body clearly visible between sparse hairs.
	Third antennal segment elongate, 3–4 times as long as first two segments together
	PARACTENOTA Engel ; STIPHROLAMYRA Engel
19	Veins closing discal cell parallel to, or even in line with vein, M_3 , which closes fourth
	posterior cell ORTHOGONIS Hermann
-	These veins not parallel; vein M_3 distinctly curved 20

20	Face with prominent knob, at least on mouth-margin. Palpi leaf-like 21
_	Face without prominent knob. Palpi cylindrical
21	Plump, hairy flies, mimicking carpenter-bees (Xylocopa). Legs short, densely
	fringed with hairs . HYPERECHIA Schiner (p. 249) ; SYSTROPALPUS Hull
	Elongate, bare or only moderately hairy flies, with long, slender legs 22
	Proboscis curved upwards like a scimitar
-	Proboscis straight
23	Metanotal callosities hairy or bristly
	KATHARMA Oldroyd ; CENOCHROMYIA Hermann ²
—	Metanotal callosities bare
24	
	LAXENECERA Macquart (p. 235)
-	Third antennal segment without hairs dorsally. Hind femora slender
	SMERYNGOLAPHRIA Hermann (p. 234)

LAPHRIA Meigen

Laphria Meigen, 1803: 270. Type-species: Asilus gibbosus Linnaeus, by designation of Latreille, 1810.

Although nearly thirty species of *Laphria* have been recorded from the Ethiopian Region (Hull, 1962 : 323) this genus is not well represented in collections, either from the equatorial forest or from the savannah areas. The flies are among the most conspicuous of Asilidae, and easily attract the attention of collectors. To some extent their apparent scarcity may be a reflection of their feeding habits, which may take them in pursuit of wasps and bees high up in the trees.

The genus Laphria shares with Storthyngomerus and Dasyllina a characteristic type of proboscis, laterally flattened, with an acute edge both dorsally and ventrally, like a paper-knife. Presumably this has some relation to the nature of the prey, though its significance is not obvious : other Laphrine robber-flies, notably the genera Proagonistes and Hyperechia, will attack big Hymenoptera, but these have a proboscis of quite a different shape.

No species of *Laphria* is among the material that I have received from the Parc National du Garamba, but I have seen a number of species from other localities in and around the Congo Basin. It seemed useful, therefore, to give details of these, and to present a key that includes as many as possible of the species of *Laphria* recorded from the Ethiopian Region.

Key to the Species of LAPHRIA of the Ethiopian Region

I	Scutellum and at least posterior part of mesonotum conspicuously covered with	
	dense, recumbent, yellow hairs, which conceal ground colour	2
	Scutellum bare, or with scattered fine hairs only, not obscuring ground colour	6
2	Legs distinctly patterned, or entirely red	3
-	Legs either entirely black, or indistinctly reddish at extreme base	4
3	Mesonotum entirely obscured by dense orange hairs, paler posteriorly	
	bella Loew, 1857 :	356

- Mesonotum mostly dull brown, with outline pattern only

lateralis Fabr., 1805: 157 (bequaerti Bromley), 1947: 409

² See under Smeryngolaphria pallida.

4	A rather small species (14 mm). Basal half of wings distinctly hyaline. Moustache
	mainly black . <i>aureopilosa</i> Ricardo, 1901 : 171 (<i>variabilis</i> Bromley), 1935 : 112 Larger species, wings paler only at extreme base. Moustache partly yellow 5
_	Larger species, wings paler only at extreme base. Moustache partly yellow 5 All segments of abdomen densely covered with bright orange hairs, which obscure
5	the ground colour
	Only first four segments of abdomen with golden hairs, which are sparse on disc and
_	do not obscure ground colour ; last three segments blackish with short black hairs
	aurifer Ricardo, 1925 : 280 (p. 228)
6	Legs distinctly patterned in black and red, or entirely red or yellow
_	Legs entirely black, or with indistinct reddish joints only
7	Hairs of moustache mainly golden
_	Hairs of moustache black, though there may be a tuft of yellow hairs at each side 9
8	Marginal bristles as well as short hairs of scutellum yellow
	lateralis Fabr., 1805 : 157 (bequaerti Bromley, 1935 : 409)
_	Marginal bristles and short hairs of scutellum black, or with only isolated yellow ones
	<i>contristans</i> Hobby, 1948 : 139 (p. 228)
9	Moustache with some orange hairs or bristles as well as black ones 10
_	Moustache without orange hairs ; with black bristles and white hairs, or entirely
	black
10	Mesonotum bare, shining blue-black. Hind femora entirely orange. Smaller
	species (15 mm)
-	
	orange. Larger species (20–25 mm)
II	Hind femora entirely black. Occiput with grey tomentum as well as black hairs.
	Abdomen black with black hairs
_	Hind femora with basal half red, apical half black. Occiput with black hairs but
	no grey tomentum. Abdomen black with orange hairs at tip
	<i>maynei</i> Janssens 1953 : 207 (p.230) Abdomen reddish brown, first segment mostly obscure dark brown, median areas of
12	
	tergites with an obscure blackish brown stripe . schoutedeni Bromley, 1935 : 408 Abdomen black
13	Dorsum of thorax and scutellum black with scattered golden hairs
13	<i>iola</i> Bromley, 1935 : 409 (p. 230)
_	Dorsum of thorax and scutellum black, with short black hairs
14	Femora bright orange, rather swollen, only extreme base and an apical ring of
- 7	variable breadth are black. Thorax and abdomen smooth and shining metallic
	blue ; black hairs not arising from obvious pits . flavipes Wiedemann, 1821 : 208
_	Fore and middle femore entirely black, slender
15	First three abdominal segments red, rest black ; abdomen rather club-shaped
	carbonaria Ricardo, 1925 : 282 (consistens Bromley, 1935 : 405) (p. 228)
-	Abdomen entirely black, or metallic blue-black
16	Large black or metallic blue-black species, well over 20 mm long
-	Length 10-20 mm
17	Abdomen entirely black
-	Segments 2, 3 of abdomen each with a broad white band, half as long as segment,
~	narrowed or interrupted in middle. Wings pale at base <i>luctuosa</i> Macquart, 1847: 37
18	Wings entirely black-brown. Metapleural bristles (just before halteres) entirely black
	black bipenicillata Bigot, 1891 : 370 (? metalli Walker, 1851 : 108) Wings black-brown, but clear at base. Upper metapleural bristles black, lower
_	1 the section Description Press, second and
19	ones white
19	Mesonotum and scutellum black, with thin, sparse covering of yellow hairs
-	

20Abdomen entirely black..nigribimbaBromley, 1935 : 406 (p. 230)-Abdomen black, with a pattern of grey tomentumricardoiBromley, 1935 : 407 (p. 230)

Laphria aurifer Ricardo

(Text-fig. 3)

Laphria aurifer Ricardo, 1925 : 280.

LULUA : Kapanga, $I \stackrel{\circ}{,} I \stackrel{\circ}{,} x.1933$ (F. G. Overlaet) ; MAYUMBE : Lundu, $I \stackrel{\circ}{,} 24.i.1925$ (A. Collart) ; HAUT-UELE : Yebo Moto, $I \stackrel{\circ}{,} xii.1926$ (A. Corbisier) (MRAC).

Laphria carbonaria Ricardo

Laphria carbonaria Ricardo, 1925 : 282. Laphria consistens Bromley, 1935 : 405.

LUKUGA : Bena Bendi, I \Im v. 1915 (*R. Mayné*) ; KIBALI : Watsa à Niangara, I \Im , vii.1920 (*L. Burgeon*) ; UELE : Bambesa, I \Im , 20.ix.1933 (*H. J. Brédo*) ; Bambesa, I \Im , 20.x.1953 (*J. Leroy*) ; STANLEYVILLE : Yangambi, I \Im , 1940, I.N.E.A.C. (MRAC).

Laphria contristans Hobby

(Text-figs 4-6)

Laphria contristans Hobby, 1948 : 139.

UELE: Bambesa, I &, I \Diamond , I \Diamond , Io.ix.1937 (*J. Vrydagh*); Bambesa, I &, 2 \Diamond , ix.-x.1933 (*H. J. Brédo*); Bambesa, 5 &, 3 \Diamond , x.1933 (*J. Leroy*); 2 \Diamond , I4.v.1933 (*P. Henrard*); Bambesa, I &, IO.ix.1937 (*J. Vrydagh*); I &, vi.1937; I &, IO.1939; terr. Wamba, Bayenge, I \Diamond , I2/22.viii.1956 (*R. Castenau*); Binza, I &, 1954 (*A. Bosma*); COQUILHATVILLE: Eala, I \Diamond , i.1936, I &, I \Diamond , x.1936 (*J. Ghesquière*); GABON: Libreville, I \Diamond , xi.1913 (*Don G. Babault*) (MRAC).

Laphria ctenoventris sp. n.

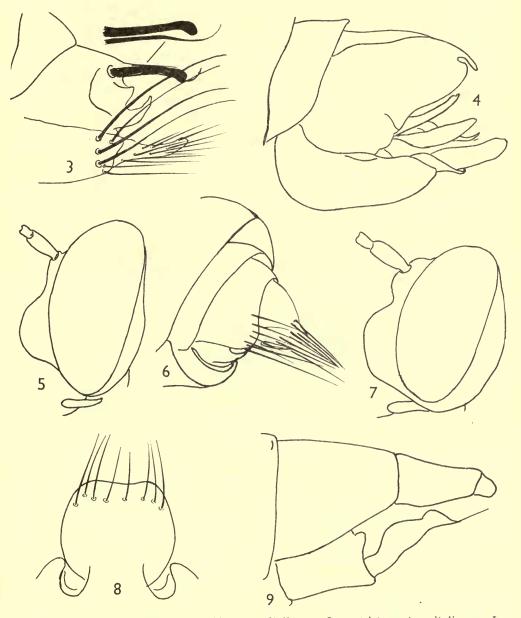
Allied to *maynei* Janssens and *hera* Bromley, but distinguished from both by having the mesonotum and scutellum bare, shining blue-black, except for small areas of brown tomentum at extreme sides. Hind femora typically entirely orange, though experience in other species of *Laphria* suggests that some variation in leg-colour is likely.

Q Head. Black. Frons with black hairs and bristles; face with yellowish tomentum and long, yellow hairs below antennae and at sides, but with moustache principally black; about three stout orange bristles ventrally on each side of moustache. Antennae black, hairs mixed orange and black. Palpi and proboscis black with orange hairs. Beard orange, but post-ocular and occipital hairs and bristles black.

Thorax. Mesonotum and scutellum bare, shining, blue-black ; brown tomentum only around humeri and postalar calli, and before base of scutellum ; covered with short, black hairs and with black bristles ; a number of weak humerals, one strong and one weak supra-alars, three or four strong postalars, and six strong marginal scutellars : of the dorsocentrals only a weak

pair of prescutellars. Pleura covered with rather thin, brassy yellow tomentum ; hairs mostly orange. Metapleural tuft mainly black.

Abdomen. Dorsum like thorax, shining blue-black, with short black hairs, and only a narrow



FIGS 3-9. Laphria spp. 3, L. aurifer, 3 genitalia. 4, L. contristans, 3 genitalia. 5, L. contristans, head. 6, L. contristans, 9 genitalia. 7, L. maynei, head. 8, L. nigribimba, 9 VIII sternite. 9, L. nigribimba, 9 genitalia.

band of brown tomentum at base of each segment. Venter similar, but with dull yellow-brown band on hind margin of each segment.

Legs. Coxae and trochanters black. Rest of legs entirely bright orange, including all tarsal segments, pulvilli, and bases of claws ; only apical three-quarters of claws black.

Wings. Almost uniformly smoky brown, indistinctly lighter towards base. Halteres yellow, knob not darkened.

Length of body 15 mm ; of wing 12 mm.

Holotype Q. LULUA: Kapanga, x.1932 (F. G. Overlaet) (MRAC).

Paratypes. Coquilhatville : Lukolela, $I \ \mathcal{Q}$, 21.xii.1920 (H. Schouteden) ; ' Congo Belge ', $I \ \mathcal{Q}$ (Don Gilson) (MRAC).

I Q, Bomba (A. Henrion) differs in having yellow hairs on mesonotum and ventrally on abdomen.

Laphria iola Bromley

Laphria iola Bromley, 1935: 409

LOMAMI : LUSUKU, I Q, XII.1930 (P. Quarré) ; LULUA : Kapanga, I Q, X-II.1931/2 (G. F. Overlaet) (MRAC).

Laphria maynei Janssens

Laphria maynei Janssens, 1953: 207.

Holotype Q. STANLEYVILLE : Yangambi, 6.vi.1952 (R. Mayné) (IRSNB).

UELE : Bambesa, I \mathcal{Q} , 9.V.1938 (*P. Henrard*) ; SANKURU : Kondue, I \mathcal{J} , I \mathcal{Q} (*Ed. Luja*) ; LULUA : Kapanga, Itonde, I \mathcal{J} , ix.1932 (*G. F. Overlaet*) ; LEOPOLD-VILLE : Lukolela, I \mathcal{Q} , xi.1934 (*Dr Ledoux*) (MRAC).

The hitherto undescribed male of this species closely resembles the female. It is somewhat larger and has the hairs of the legs much longer, especially on ventral surfaces of femora and tibiae.

Laphria nigribimba Bromley

(Text-figs 8-9)

Laphria nigribimba Bromley, 1935 : 406.

UELE : Bambesa, 2 Q, 15.ix.1933 (H. J. Brédo) ; Bambesa, 1 Q, 15.ix.1933 (J. V. Levy) ; STANLEYVILLE : Basoko, Yacharo, 1 Q, iv.1949 (P. L. G. Benoit) ; UBANGI : Binga, 1 Q, 5/12.iii.1932 (H. J. Brédo) ; LULUA : Kasai, 1 Q, 1928 (Dr. Walker) ; Coguilhatville : Flandria, 1 J, iii.1932 (R. P. Hulstaert) ; Eala, 1 J, 2 Q, 1932 (A. Corbisier) ; KUNDELUNGU : riv. Kalumbulwa, 1 Q, 22.10.1951 (G. Marlier) ; TSHUAPA : Bokuma, 1 Q, 1953 (R. P. Lootens) (MRAC).

Laphria ricardoi Bromley

Laphria ricardoi Bromley, 1935: 407.

COQUILHATVILLE : Eala, I Q, vi.1932 (A. Corbisier) ; MAYUMBE : Zobe, I J, I Q, i.1916 (R. Mayné) ; UBANGI : Libenge, I Q, i.1927 (Leontovitch) ; TANGANIKA :

Kamens, 1400 m, riv. Kinga, 1 J, i.1953 (*H. Bomans*) ; LEOPOLDVILLE : Thysville $1 \heartsuit (Dt. Houssiaux)$ (MRAC).

DASYLLINA Bromley

Dassylina Bromley, 1935: 412 [lapsus for Dasyllina]. Type-species : Dasyllina fulvithorax Bromley, loc. cit.

The original diagnosis of this genus makes it clear that the name indicates its general resemblance to the American genus *Dasyllis*, and therefore the spelling *Dassylina* is incorrect.

Dasyllina fulvithorax Bromley

Dasyllina fulvithorax Bromley, 1935: 413.

BAS-CONGO : Kimwenza, 1 3, i-iv.1956 (R. P. Van Eyen) (MRAC).

STORTHYNGOMERUS Hermann

Storthyngomerus Hermann, 1919: 357, note; Engel, 1924: 106; Lindner, 1955: 35, fig. 3. Type-species: Dasypogon tridentatus Fabricus, by original designation.

Nusina Curran, 1927:7; Bromley, 1935:411. Type-species: Laphria dymes Walker, by original designation.

Each of these two genera was described in a brief note, indicating the type-species, but saying little about the limits of the genus, or of its affinities. The interpretation that I have put upon *Storthyngomerus* is that given by Lindner (1955).

The type-specimen of Laphria dymes Walker is in the BMNH, so that Nusina can be defined precisely. There can be no doubt that N. dymes is conspecific with Storthyngomerus tridentatus (Fabr.), and that only females have so far been assigned to these. On the other hand, Nusina aurea Bromley is known only from males, and it seems clear from material in the BMNH that most of these are also conspecific with dymes and tridentatus. Confusion is caused by the sexual dimorphism of the legs, the femora being all orange in the females and heavily darkened in the males. One male in the BMNH, with legs entirely orange like the females, has distinctive genitalia and is clearly specifically distinct.

The fact that the orange-legged females are conspecific with the dark-legged males and not with the orange-legged male is supported by the other characters mentioned in the key below.

Laphria testacea Macquart was transferred to the genus Storthyngomerus by Engel (1924), who did not give any reason for doing so, and it is difficult to understand why. The description of testacea Macquart agrees quite well with specimens of Trichardis testacea Hermann (q.v.), whereas the statement that the antennae are 'assez courtes' does not suggest Storthyngomerus.

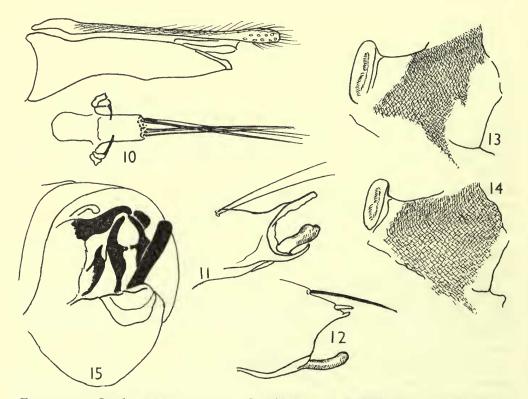
Lindner (1955) described *Storthyngomerus minor*, a very much smaller, black species, which seems incongruous with the much bigger typical species. Yet it shares the generic characters of *Storthyngomerus* which, besides the elongate antennae, include the absence of scutellar bristles and the presence of spiny tubercles beneath the hind femora, somewhat like those of *Trichardis* (q.v.).

KEY TO THE SPECIES OF STORTHYNGOMERUS

- I Tiny species not more than 7 mm long. *First* antennal segment elongate, about as long as height of face. Facial knob small . . *minor* Lindner (Kenya) (p. 234)
- Much longer specimens, 11-15 mm long. First antennal segment much shorter, only twice as long as second, and much shorter than height of face. Facial knob short but strongly prominent.
- Proboscis no more than three-quarters height of head. Mesopleuron with anterior pale margin inconspicuous or absent (Text-fig. 14). Femora orange in males. Genitalia of male as in Text-fig. 2; lower forceps not curled round tip of clasper, and with a small apical spine but only one long bristle . toroensis sp. n. (p. 233)

Storthyngomerus tridentatus (Fabricius)

(Text-figs 10, 11, 13)



FIGS 10-15. Storthyngomerus spp. 10, S. tridentatus, φ genitalia; 11, S. tridentatus, clasper of ϑ ; 12, S. toroensis, clasper of ϑ ; 13, S. tridentatus, mesopleuron and spiracle; 14, S. toroensis, mesopleuron and spiracle; 15, S. minor, ϑ genitalia.

Dasypogon tridentatus Fabricius, 1805 : 167 Laphria dymes Walker, 1849 : 377. Nusina aurea Bromley, 1935 : 411.

GARAMBA NATIONAL PARK : 1949-52, I \bigcirc (no detailed locality or number) (IPNC). KATANGA : Elisabethville, I \bigcirc , 30.ix.1926 (*Dr. M. Bequaert*) ; SANKURU : Komi, 2 \bigcirc , v.xii.1930 (*J. Ghesquière*) ; STANLEYVILLE : Stanleyville, I \bigcirc , 13/23.viii.1928 (*A. Collart*) ; CoQUILHATVILLE : Eala, I \bigcirc , viii.35 (*J. Ghesquière*) ; Eala, I \Huge{S} , iv.1933 (*A. Corbisier*) ; BAS-CONGO : Lemfu, I \heartsuit , vi.1945 (*Rév. L. De Beir*) ; TSUAPA : Ikela, I \heartsuit , 1955 (*R. P. Lootens*) ; KWANGO : Mwilambongo, I \heartsuit , ix.1949 (*Vanden Borght*) ; UELE : Bambesa, I \Huge{S} , 10.viii.1937 (*J. Vridagh*) (MRAC).

Storthyngomerus toroensis sp. n.

(Text-figs 12, 14)

The solitary known male of this species is superficially very similar to males of *S. tridentatus*, but differs in having the legs entirely orange ; in *S. tridentatus* the *females* have orange legs, but the males have at least the middle and hind femora with broad black bands. The proboscis is distinctly shorter than in *tridentatus*, being only three-quarters as long as the height of the head instead of rather longer than this distance. In corroboration there are very clear differences in the male genitalia. (Text-figs 12, 14.)

A Head. Facial knob prominent, occupying lower half of face and separated by a distinct hollow from the prominent tubercle on which the antennae stand. First antennal segment twice as long as second (third segment broken off). General colour of head black. Frons, vertex and upper occiput bare, shining black, with sparse black bristles. Face with yellowish grey tomentum except for a bare patch on facial knob. Hairs yellow, more scaly on middle of eye-margins. Stronger bristles of moustache black. Proboscis and palpi black : palpi with black hairs, base of proboscis with longer white hairs. Behind the eyes a broad strip of yellowish white tomentum, with black bristles on dorsal two-thirds, fine yellow hairs ventrally.

Thorax. Pronotum black with about eight strong black bristles. Mesonotum and scutellum black, uniformly covered with short, fine, black, bristly hairs and short, golden, silky hairs. Humeri with some longer black hairs, and prehumeral hollows with white tomentum; one notopleural and one supra-alar black bristle; no long marginal scutellars. Pleura black, covered with white tomentum except for mesopleuron, which has a large, bare, shining black area almost reaching to anterior margin, and so with the anterior white margin much less obvious than in S. tridentatus; one black mesopleural bristle. Metapleural tuft before halteres black, bristles strong and dense.

Abdomen. Dorsum with reduced first segment and entire second segment black, with short black hairs ; second segment laterally with yellow hairs and a tuft of two or three strong orange bristles. Rest of abdomen, including genitalia, orange, with yellow or pale yellow hairs. Genitalia as in Text-fig. 12, distinct from those of \mathcal{J} tridentatus in having lower forceps flattened and acutely tipped, with one long bristle and a short, subapical spine. No dorsal process curving round clasper. (Genitalia rotated through 180.°)

Legs. Trochanters black; rest of legs entirely orange, with nearly all hairs and bristles yellow, except for a few on tarsi and a large patch of black dorsally on femora (S. tridentatus \mathcal{J} has yellow hairs even over the black femoral patches).

Wings. Infuscation—both staining and microtrichiae—almost uniform all over, without clearer centres in basal, anal and axillary cells. Halteres orange.

Length of body 15 mm ; of wing 13 mm.

Holotype J. UGANDA: Southern Toro, Mbarara, Fort Portal Road, 3,800-4,200 ft, 22-24.X.1911 (S. A. Neave) (BMNH).

Storthyngomerus minor Lindner

(Text-fig. 15)

Storthyngomerus minor Lindner, 1955: 35

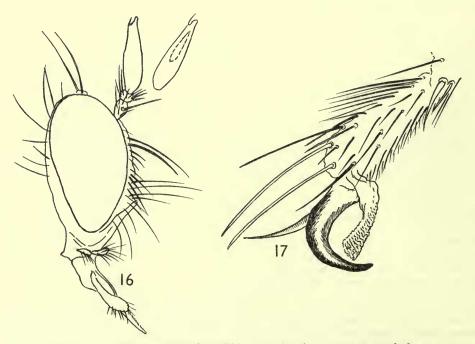
Holotype Q. TANGANYIKA : Dar-es-Salaam, xi.-xii.1951 (E. Lindner) (SMNS). KENYA : Diani Beach, vii.51 (N. L. H. Krauss) (BMNH).

SMERYNGOLAPHRIA Hermann

Smeryngolaphria Hermann, 1912:226; Bromley, 1935:410; Hull, 1962:331. Typespecies: Laphria melanura Wiedemann, 1828, by original designation.

Smeryngolaphria is a small and rather ill-defined genus from South and Central America. Bromley (1935) considered that it should be extended to include the Oriental species for which Hermann had erected the genera Anisosis and Orthogonis; and the BMNH collection contains a number of red-and-black Laphriine species that were placed in Smeryngolaphria by Miss Ricardo.

Bromley also described *Smeryngolaphria pallida* from a single male from the eastern Congo. A second specimen from the same area is before me, and there is no doubt that it belongs to *pallida* Bromley. The generic assignment is less certain.



FIGS 16, 17. Smeryngolaphria pallida. 16, head ; 17, tarsus and claw.

According to Hull (1962), and to specimens in the BMNH, it seems at least equally likely that it should be placed in the genus *Cenochromyia* Hermann (1912:115), another genus of yellow or reddish Laphrine flies from New Guinea and adjacent areas. It will not run to *Smeryngolaphria* in my key to African genera (Oldroyd, 1963:11) because the metanotal slopes are hairy. In Hull's interpretation these slopes should be bare in *Smeryngolaphria*, though Bromley considered that they might be either hairy or bare. Bromley specifically mentions that they are hairy in his species *pallida*.

A clear decision about the genus of this fly cannot be made in isolation, and will have to await a more general study of the Laphriini.

Smeryngolaphria pallida Bromley

Smeryngolaphria pallida Bromley, 1935: 410.

Holotype 3. KIVU : Walikale, 1.i.1915 (J. Bequaert) (MCZH). W. KIVU : Lubongola, pr. Shabunda, 1 \mathcal{Q} , 1939 (Dr. Hautman) (MRAC).

LAXENECERA Macquart

Laxenecera Macquart, 1838:77; Hermann, 1919:337-358. Type-species: Laxenecera albibarbis Macquart (an Indian species), by designation of Hermann, 1919, loc. cit.

Acurana Walker, 1851 : 107. Type-species : Acurana sexfasciata Walker, monotypic.

Dyseris Loew, 1857: 357; 1860: 122. Type-species: Laxenecera andrenoides Macquart, by designation of Loew, 1860: 122.

Laxenecera is most easily recognized by the fairly long, narrow third antennal segment, which bears a distinct fringe of hairs dorsally as well as ventrally. Macquart says that the name expresses the hairiness of the antennae. Unfortunately the antennae of Asilidae are prominent, and are easily destroyed in dried specimens, and then it is necessary to rely upon a combination of other characters. Moreover, dorsal hairs on this antennal segment also occur in some *Hoplistomerus* and *Trichardis*.

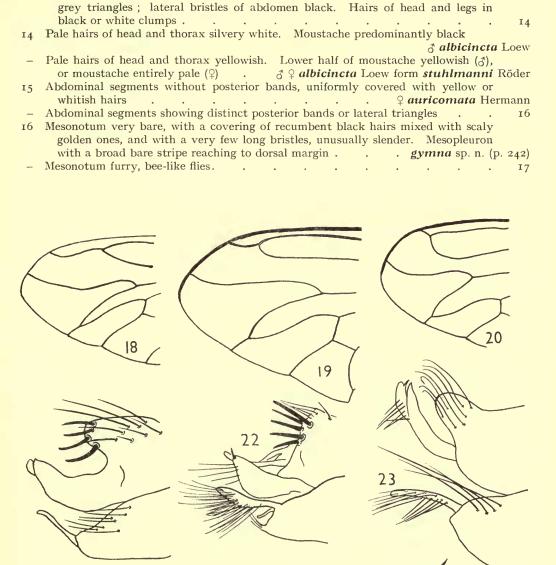
Laxenecera has the proboscis triangular in cross-section, the palpi very slightly clubbed at the tip, and usually the hind femora swollen with the hind tibiae correspondingly curved. Many of the species look like small bees.

There is one widespread, common, and variable species (*albicincta* Loew), and a number that are more locally distributed. There is considerable variation between individuals, and this is one of the most difficult genera to present in the form of a key to species. The male genitalia can be examined to some extent without dissection, and show some differences between species, but I have not found these much use in identification. A confusing factor is the very great sexual dimorphism that is generally present : e.g. in *albicincta* the male is a slender black fly, with white hairs and no abdominal bands ; the female is a stout fly with rusty yellow hairs and bristles, and conspicuous bands on the abdomen. The leg-pattern is the most reliable way of associating males and females, but individual variation must be allowed for.

The two species originally included by Macquart were from India, but as we know it today the genus is predominantly an African one. Loew erected the genus *Dyseris* for some of the African species as a result of an error in the numbering of a Plate in one of Macquart's works ; the error was pointed out by Hermann (1919).

Key to the Species of LAXENECERA of the Congo Basin

I	Mesonotum with distinct long bristles, prominent in contrast with the much shorter
	clothing hairs. Sides of abdominal tergites usually with strong bristles 2
	Mesonotum either furry, with bristles hidden among long, soft hairs, or else with
	very short clothing hairs and almost no long bristles. Sides of abdomen usually
	without strong bristles
2	Legs partly orange or yellow, with extensive paler areas on tibiae or femora.
_	Legs almost entirely black, no more than faintly reddish on tibiae and at base of
	hind femora
3	Femora black, except perhaps for base and tip of hind femora
_	Femora extensively orange, especially hind femora
4	Abdomen clothed uniformly with yellow hairs, or with a few white ones at sides, but
	no obvious posterior bands on abdominal segments . $\[Phi]$ auricomata Hermann (p. 238)
	Abdomen with obvious posterior bands on each segment
5	First three abdominal segments with broad posterior bands of dense whitish hairs;
5	other segments contrasting, almost black & abdominalis sp. n. (p. 238)
_	All abdominal segments with posterior bands of pale tomentum and hairs 6
6	Only tarsi and dorsal surfaces of tibiae orange. Occipital hairs generally including
	a black tuft. Wings lightly but uniformly smoky. J hind femora and tibiae
	without conspicuous black ventral fringe <i>rufitarsis</i> Bezzi (<i>funditor</i> Curran) (p. 239)
	Fore and middle tibiae mainly orange. Occipital hairs generally entirely yellowish.
	Wings strongly infuscated along veins. J hind femora and tibiae swollen, and
	with a conspicuous fringe of black hairs ventrally misema sp. n. (p. 239)
7	Hind femora red at base, black apically, divided transversely pulchella sp. n. (p. 239)
_	Hind femora with red and black horizontal stripes
	albicincta Loew, undescribed form
8	Abdominal segments with a well-defined band of tomentum on posterior margin . 9
-	Abdominal segments without a posterior band of tomentum, or with one at sides only 13
9	Scutellum with black hairs on disc, though marginals may be pale. Wings dark
	brown (3). Middle legs with black hairs ventrally, white hairs dorsally (3)
	dimidiata Curran (p. 240)
-	Scutellum with pale hairs and bristles. Wings pale
IO	Hind femora and tibiae with conspicuously strong bristles, especially antero-apically
-	Hind femora and tibiae with long, fine hairs and bristles, but not conspicuously
	strong ones
II	Abdomen with dense golden tomentum on posterior bands, and almost entirely
	covering first two or three segments francoisi sp. n. (p. 240)
-	Abdomen with ashy grey tomentum on posterior margins, otherwise black-brown
	Palbicincta Loew (p. 241)
12	Mesonotum with short, recumbent, golden hairs, almost lost in a mass of very long,
	fine hairs, giving a bee-like appearance. Hind tibiae with a brush of long black
	hairs ventrally
-	Mesonotum with recumbent golden hairs, but almost no long hairs or bristles.
	Whole insect bare and rather deficient in long hairs and bristles sororcula Karsch
13	Short, recumbent hairs of abdomen yellow, as are lateral bristles. Hairs of head
	and legs predominantly yellow
-	Short, recumbent hairs of abdomen almost entirely black, except on small lateral



FIGS 18-25. Laxenecera spp. 18, L. mollis, wing; 19, L. andrenoides, wing; 20, L. engeli, wing; 21, L. albicincta, 3 genitalia; 22, L. andrenoides, 3 genitalia; 23, L. auricomata, 3 genitalia; 24, L. albicincta, maxilla and 2-segmented palpi; 25, Ctenota mollitrix, maxilla and 1-segmented palp.

25

17 Hairs of mesonotum (though not of pleura) entirely black in ♂, partly grey in ♀. Scutellum shining black with yellow tomentum at base, and hairs entirely black

- chapini Curran (p. 243)
- 18 Moustache, both male and female, with black hairs in lower part. Mesopleuron mostly tomented, with only a small bare black area nigrociliata Hermann (p. 243)
- Moustache either yellow (3) or pale yellowish (9), but without an obvious black tuft. Mesopleuron shining black for about half its area, tomented on dorsal and posterior margins
 dasypoda Speiser *scopifera* Speiser

Laxenecera auricomata Hermann

(Text-fig. 23)

Laxenecera auricomata Hermann, 1919 : 351.

KIVU : Tshibinda, 3 3, 1 9, xii.1927 (Ch. Seydel) ; Muhunga, Tshibinda, 1 3, xi.1951 ; ITURI : Luburo, 1 3, 1958 (Mme van Riel) ; HAUT-UELE : Yebo Moto, 1 9, 1926 (L. Burgeon) (MRAC). Also found in UGANDA.

Laxenecera abdominalis sp. n.

The male is distinguished from all other *Laxenecera* known to me by having the first three abdominal segments mainly or entirely covered with whitish hairs, while the rest of the abdomen has the hairs almost exclusively black.

 δ Head. Clothed with golden hairs, except for a black tuft on each side of frons, close to antennae, and a black tuft in middle of occipital margin. First antennal segment with yellow hairs, other two with black hairs.

Thorax black. Ground colour of mesonotum and scutellum almost obscured by short, recumbent, whitish or yellowish hairs. Bristles longer, fine and hair-like, black on disc of mesonotum, whitish laterally and posteriorly, and on margin of scutellum. Pleura mostly obscured by brownish tomentum. Mesopleuron shining black, with a vertical posterior band of yellowish tomentum, and some black some yellow bristles.

Abdomen black, obscured by short, recumbent yellow hairs. On first segment and a broad posterior band on second and third, these are silky white, but on anterior half of second and third segments, and almost entirely on other segments, they are black. Venter black-brown with mainly yellowish hairs.

Legs mainly black, but tibiae and tarsi of fore and middle legs are extensively orange, with numerous yellow hairs and bristles. Hind femora black, with mainly black hairs, but with a few white ones dorso-apically, hind tibiae with dense and moderately long white hairs dorsally and ventrally ; hind tarsi with black hairs ventrally and a conspicuous fringe of dense silvery ones dorsally.

Wings rather smoky towards tip, no special features. Length of body 14 mm; of wing 10 mm.

Holotype J. TANGANIKA : Albertville, iii.18-i.19 (MRAC).

Paratypes. Same data, 2 3 (MRAC).

Laxenecera rufitarsis Bezzi

Laxenecera rufitarsis Bezzi, 1908 : 377 Laxenecera funditor Curran, 1927 : 8.

URUNDI : Butetsi (Moso), I 3, 27.v.1950 ; Terr. de Rutana, colline Kisikara (Bunyambo), alt. 1,600 m, I 9, 20.vi.1952 ; Bururi, 2,000–2,250 m, 7 3, 7 9, 9.v.1949 ; Kitaba, 1,850 m, 2 3, 10.vi.1949 (FJF).

Laxenecera misema sp. n.

Closely allied to *rufitarsis* Bezzi (*funditor* Curran), from which it is distinguished in the male by the conspicuous fringes of the hind legs. In both sexes it is further distinguished by having the fore and middle tibiae orange, without a black stripe, and by having the occipital bristles all yellow, without a black tuft.

 \mathcal{S} Head with some black hairs on second and third segments, and on tips of palpi, otherwise all hairs of head yellow.

Thorax. Mesonotum dull black, with narrow margin of yellowish tomentum at extreme sides, and whitish tomentum anteriorly. Short hairs golden, and closely recumbent, longer hairs and fine bristles mostly golden, but some black ones. Supra-alar and postalar bristles strong, yellowish, postalar callus a little reddish. Pleura, except for the usual bare mesopleural area, with brassy yellow tomentum and yellow hairs and bristles.

Abdomen black, each segment becoming dull reddish towards posterior margin. On hind margin of each is a triangular patch of whitish hairs at each corner, extending towards middle line; adjacent to these is a band of yellow hairs, which cover whole of first and second tergites, but the others have black hairs over most of disc.

Legs of male with conspicuously swollen hind femora, and stout, bowed hind tibiae, with a brush of black hairs ventrally on apical half of femora and on full length of tibiae. Hind femora black with red apex and base ; tibiae red ; both femora and tibiae obscured by short black hairs. A few strong yellow bristles stand out among black hairs, especially on tibiae. Femora and tibiae both with white hairs posteriorly. Hind tarsi orange, with dense tufts of hair on each segment, silvery white on anterior face, black on posterior face. Fore and middle femora black with red base and tip ; their tibiae and tarsi entirely orange.

Wings greyish, distinctly infuscated along veins.

Length of body 15 mm; of wing 11 mm.

Holotype J. LOMAMI : Luputa (Bouvier) (MRAC).

Paratypes. I, I, Q, same data. One specimen captured from the wasp *Bembex* (MRAC).

Laxenecera pulchella sp. n.

A variable species, recognized by the red antennae, swollen and mainly red hind femora, and in particular by the grey band along the transverse suture of the thorax. This species of north-eastern Africa is included for comparison with *misema*.

Head. Second and third antennal segments dull red, with black hairs; first segment black, with pale yellowish hairs. Palpi with some black hairs, otherwise hairs of head all pale yellowish, or a little golden towards tips.

Thorax shining black, with a strip of grey tomentum along transverse suture, interrupted in middle. Sides of mesonotum with tomentum, which may be grey, but in some specimens is

golden yellow; silky hairs and bristles may be pale yellowish or deep golden. Pleura evenly covered with grey tomentum and with pale yellowish hairs and bristles.

Abdomen dorsally shining black with black hairs, and with broad posterior bands of grey tomentum with white hairs. Sometimes ground colour under these bands is reddish, especially at sides. In some specimens each segment also has a fore-border of grey tomentum. Strong lateral bristles on anterior segments.

Legs. Fore and middle femora almost entirely black, with only extreme bases and tips yellow; fore and middle tibiae yellow dorsally, black ventrally, their tarsi orange. Hind femora swollen, red, with a black area of variable extent at tip; hind tibiae orange-yellow, a little dusky on posterior face; tarsi red. Hairs of legs white, and bristles pale yellowish, with short black bristles ventrally on hind femora.

Wings uniformly faintly greyish, veins yellow towards base.

Length of body 13 mm ; of wing 10 mm.

Holotype 3. SOMALILAND : 30 m. S. of Shillawa, 23.ii.53 (*Greathead*) (BMNH). Paratypes. Same data, 1 ; Kenya : W. side of Turkwell Valley, 2 3, 1.v.54 (*Greathead*) (BMNH).

Laxenecera dimidiata Curran

Laxenecera dimidiata Curran : 7.

ITURI : d'Obougena à Utike (Collart) ; Stanleyville area (Lang & Chapin) ; KATANGA : Lukagu (de Witte) (MRAC).

Laxenecera francoisi sp. n.

In pattern rather like the female of *albicincta*, but distinguished by the more golden yellow colour of the tomentum and by having the abdominal segments liberally covered with yellow hairs, which almost entirely obscure the posterior bands on the first two segments.

Head. Black, with black bristles on 2nd and 3rd antennal segments and on palpi; otherwise all hairs yellow, or beard indistinctly white.

Thorax black. Mesonotum with thin golden tomentum, leaving a faint indication of a divided median stripe. Hairs yellow, mixed with a few black ones; long and short hairs not greatly different in length. Scutellum with yellow hairs and numerous long, yellow marginal bristles. Pleura shining black in part, otherwise tomentum, bristles and hairs yellow.

Abdomen dorsally shining black in ground colour, each segment with a broad posterior band of golden tomentum, which extends forwards along side-margins. These yellow bands clothed with golden bristles and hairs. On first two, or perhaps three, tergites the disc of the segment is also covered with brownish yellow tomentum and clothed with golden hairs; on other segments tomentum more blackish, and there are more black hairs.

Legs mainly black. Fore and middle femora rather indistinctly yellow dorsally; hind femora red at extreme base. Hairs and bristles all yellowish.

Wings faintly smoky, more yellowish towards base.

Length of body 13-14 mm ; of wing 10 mm.

Holotype J. BAS-CONGO: Tshela-Mata, 20.v.58 (François) (FJF).

Laxenecera albicincta Loew

(Text-figs 21, 24)

Laxenecera albicincta Loew, 1852 : 659. Laxenecera apiformis Walker, 1855 : 571.

Laxenecera nigrocuprea Walker, 1855 : 572. Dyseris zonata Loew, 1857 : 358 Laxenecera stuhlmanni v. Röder, 1893 : 205. Laxenecera splendida Hermann, 1919 : 341.

The male and female of this species are normally so different that they might be mistaken for quite distinct species. Typically the male is black, with almost entirely black bristles, and no more than a trace of whitish bands laterally on the abdomen. The female is a more bulky insect, with obvious bands of whitish grey or yellowish grey on the abdomen, and with the hairs of the head, thorax and legs predominantly rusty yellowish. In particular the postalar tuft is rusty yellowish, and stands on a tawny callus.

The female has quite a close resemblance to the bee Megachile felina Gerst.

The variation in this species is most obvious in the male, where the presence of any white or yellowish hairs is more conspicuous than it is in the female. Hermann (1919) gave it as his opinion that *stuhlmanni* v. Röder was no more than a variety of *albicincta*, distinguished from the typical form by the somewhat differently coloured hairs, especially those of the legs. In Hermann's own variety *splendida* there is less difference between the sexes than in typical *albicincta*, and some males from the Congo Basin have taken on much of the superficial appearance of the females, especially in the rusty yellow postalar bristles, and in the pale moustache. Somewhat similar variation occurs in specimens from the Gold Coast collected by Dr John Bowden. These males seem to have genitalia indistinguishable from those of the typical form.

Laxenecera albicincta is common and widely distributed in eastern and southern Africa, from ETHIOPIA to NATAL and ZULULAND, and round to the mouth of the River Congo. Although it occurs round the fringes of the Congo Basin, and occasionally on the river itself, it is not properly a forest species.

P.N.G., 2332 II/gd/4, I Q, 30.vii.1951 ; 585 I/a/M, I Q, 7.vi.1950 ; 473 Akam, I Q, 3.v.1950 (IPNC).

BAS CONGO: Lemfu, 16 3, 12 9, i.1915 (*Rév. P. De Beit*); Kisantu, 2 3, 29–30.xii. 1953 (*P. Basilewsky*); RUANDA: Kagera, Gahinga, 1 3, 29.iv.1937 (*H. J. Brédo*); Rutshuru, 1 3, 28.v.36 (*L. Lippens*); LUALA: Kapanga, 1 3, iv.1932 (*G. F. Overlaet*): Magidi, 1 3, 1942 (*Rév. P. Van Even*); de Tenka à Dilolo, Km 109, 1 3, iv.1932 (*Dr Ritschard*) (MRAC).

KATANGA : Elisabethville, I \mathcal{Q} , 27.iv.1912 (*M. Bequaert*) ; I \mathcal{Q} , 1928–29 (*P. Quarré*) ; ITURI : Arac-Aru, I \mathcal{Q} , vii.1952 (*M. Winand*) ; Jadotville, Numbi, 23, 2 \mathcal{Q} , v.1957 (*R. P. Th. de Caters*) (MRAC).

URUNDI : Terr. de Bubanza, Colline Gihanga (Ruzizi), alt. 850 m, 3 J, 3 Q, 6.iii.1952 ; Gihanga, Plane de la Ruzizi, 850 m, 5 J, 3 Q, 9.iii.1932 ; Butetsi (Moso), 1 J, 22.v.1950 ; Ruyigi, 1,600 m, 1 J, iii.1955 ; Mishiga, 1 J, 15.v.1957 ; Terr. de Butana, Colline Ntangusa, Moso, alt. 1,350 m, 1 J, 21.vi.1952 ; Kibunbu, 2,100 m, 2 Q, 25.vi.1950 (FJF).

MOÇAMBIQUE : Chemba, 1931 (A. Ravet) (MRAC).

Laxenecera chrysonema sp. n.

A small, black species, with conspicuous golden hairs on all parts of the body, distinguished from *sororcula* Karsch by the way in which the recumbent hairs of the mesonotum are almost hidden in a mass of long, fine hairs.

 $rac{S}$ Head. Pubescence long and golden. Antennae have golden hairs, which are mixed with black on second and third segments; a tuft of black hairs on occipital fringe; palpi with black hairs.

Thorax black with some greyish tomentum on pleura and sides of mesonotum. Mesonotum with short, recumbent golden hairs, longer towards sides, mixed with very long, erect, fine hairs which are yellow and black. Scutellum with yellow hairs on disc and long yellow marginal bristles. Supra-alar tuft dense, yellow, but above and before wing-base there are several long black bristles. Pleura with yellow hairs.

Abdomen black-brown. Dense yellow hairs form a fringe on sides, and on hind margins of segments. Hairs on disc of each segment sparser, but mainly yellow.

Legs all black, with long yellow hairs and bristles. Venter of each tibiae had black hairs and bristles and there are a few black bristles elsewhere on hind tibiae and tarsi.

Wings faintly and uniformly smoky.

Length of body 10 mm ; of wing 8 mm.

♀ similar but less golden.

Holotype J. KATANGA : Lubumbashi, 9.xii.23 (Seydel) (MRAC).

Paratypes. KATANGA : Lubumbashi, 1 Q, 9.xii.23 (Seydel) ; Mwema, 2 J (Bayet) ; Nyamgwe, 1 Q (R. Mayné) (MRAC).

Laxenecera gymna sp. n.

A rather elongate and bare, black species, the mesonotum clothed only with very short, recumbent hairs, and almost without strong bristles.

Q Head black with black bristles on occiput, ocellar tubercle and sides of frons. Moustache with black bristles mingled with many white hairs, especially thick laterally. Palpi and proboscis black ; palpi with stiff black bristles and fine whitish hairs. Antennae black, with short but numerous black hairs and bristles ; third segment more than $r\frac{1}{2}$ times as long as first two together.

Thorax black. Mesonotum bare with only small prehumeral patches of grey tomentum; uniformly covered with short, curly black hairs, interspersed with short, silky yellow hairs. Only supra-alar bristles moderately strong, mixed black and yellow; other bristles few and very slender, including slender yellow marginal scutellars. Pleura with whitish tomentum, leaving a broad vertical band of shining black which reaches to upper margin of mesopleuron. Metapleural hairs mainly black.

Abdomen shining black, with small triangles of greyish tomentum in posterior angles. Short clothing hairs black, except for a few white or yellow ones on hind margins of segments, and entirely covering sixth and seventh tergites. Venter with grown tomentum and longer yellowish hairs.

Legs black, with yellow hairs and bristles. Wings uniformly stained brownish. Halteres dark brown. Length of body 15 mm; of wing 12 mm.

Holotype Q. KASAI : Terr. de Dekese, Itunda, x.59 (F. J. François) (F.J.F.).

Laxenecera chapini Curran

Laxenecera chapini Curran, 1927:9.

P. N. DU GARAMBA : 422 I/a/3, I ♀, 17.iv.1950 ; 717 I/a/3 amont. I ♀, 24.vii.1950; 895 Napokomweli, I ♀, 18.x.1950 ; 1525, II/9f/4, I ♀, 10.iv.1951 ; 1576, II/fb/4, I ♂, I ♀, 19.iv.1951 ; 1726, II/fd/17, I ♀, 14.v.1951 ; 1810, II/cf/12, I ♀, 23.ii.1951 ; 1915, II/fd/18, I ♀, 15.vi.1951 ; 2015, II/ge/6, I ♀, 29.vi.1951 ; 2447, II/fd/11, I ♀, 18.ix.1951 ; 3429, II/fd/18, 2 ♂, 6.v.1952 ; 4076, Mt Moyo, I ♀, 25.ix.1952 (IPNC). ITURI : Mongbwelu, Kilo, I ♂, vii.1938 (*Mme Scheitz*) (MRAC).

Laxenecera nigrociliata Hermann

Laxenecera nigrociliata Hermann, 1919: 356.

LOMAMI : Luputa, I Q, i.1935 (*Dr Bouvier*) ; RUANDA : Kibungu, I \mathcal{J} , I Q, x-xii.1937 (*R. Verhulst*) ; Mahamba, 1400 m, terr. Nyanza, I Q, 13/15.i.53 (*P. Basilewsky*) ; Gahiro, 1300 m, terr. Blumba, I Q (*P. Basilewsky*) ; URUNDI : Maleka, I Q, 31.xii.1932 (*L. Burgeon*) ; KIVU : Costermansville, I \mathcal{J} , 1951 (*H. Bomans*) ; KATANGA : Lugombo, I Q, xii.1929 (*Ch. Seydel*) ; Elisabethville, 2 \mathcal{J} , 2 Q, ii-iv.1938 (*De Loose*) ; Lac Albert, Ishra, I \mathcal{J} , ix.1935, (*H. J. Brédo*) ; Kapanga, I Q, ix.1932 (*F. G. Overlaet*) ; KIBALI-ITURI : Djugu, I \mathcal{J} , 13.viii.1931 (*Mme. L. Lebrun*) ; ITURI : Bambili, I \mathcal{J} , 5.xii.1913 (*Dr Rodhain*) ; BAS-CONGO : Mahagi, Nirembe, I \mathcal{J} , ix.-x. 1935 (*Ch. Scops*) (MRAC). URUNDI : Kisenyi, alt. 1350 m, I \mathcal{J} , 2 Q, v.1955 ; 4 Q iv-v.1957 ; terr. de Muhinga, colline Nyabisudo, (Bugesera), alt. 1200 m, I Q, 3.vi.1952 (FJF).

NUSA Walker

Nusa Walker, 1851 : 105. Type-species : Nusa aequalis Walker, by designation of Hermann, 1912 : 239.

Dasythrix Loew, 1851:21. Loew, 1860:124. Type-species: Laphria (Dasythrix) inornata Loew, by original designation.

Halictosoma Rondani, 1873: 298. Type-species : Halictosoma puella Rondani, monotypic.

Hermann (1912) was misled by the original drawing of *Nusa aequalis* Walker into accepting this as an earlier name for *Andrenosoma* Rondani, but Ricardo (1927) after studying the type in the BMNH, rightly removed *Nusa* into synonymy with *Dasythrix* Loew, 1851, over which it was shown to have three months' priority.

Loew divided his genus *Dasythrix* into two sections, making *inornata*, a South American species, type of the first section, and *infumata*, a South African species, type of the second. Loew gave no distinctions between his two sections, and I have not seen the S. American *inornata*, which clearly must be the type of any restricted genus *Dasythrix*. *Nusa aequalis* Walker is from India, and is congeneric with the African species. Hence, if at a later date it should prove that Loew's two sections are not congeneric with each other, section I, type *inornata*, would retain the name *Dasythrix*, and section 2 would still be called *Nusa*.

Ricardo (1925 : 278) described 'Nusa africana 3, Hermann in litt., sp. n.', and stated that this species was congeneric with Andrenosoma boranica Corti from East

Africa, accepting at that time Hermann's view of the synonymy between Nusa and Andrenosoma. Later (1927: 206), when she realised the true identity of Nusa Walker, Miss Ricardo renamed her species Andrenosoma africana, but examination of the series in the BMNH, including the types, shows that even this is incorrect. Nusa africana Ric. belongs to the genus Proagonistes, and is not congeneric with boranica Corti, which is a true Andrenosoma.

Nusa, as correctly defined, is distinctive in appearance. The wing-margin is membranous shortly beyond R_4 , the first and fourth posterior cells typically closed with a long, or very long stalk, and the veins tending to fade before reaching the wing-margin. The characteristic appearance of flies of this genus is enhanced by the stiff bristles on all parts of the body, including the head.

Species have been recorded in the genus *Dasythrix* from all the zoogeographical regions except the Nearctic, but it is by no means certain that they all belong properly in *Nusa*. Among the African species there is extensive sexual dimorphism, the males tending to be distinctly blacker than the females, and with black hairs everywhere instead of white ones. There is, however, variation in this, and among a complex of specimens there are many males with black moustache and some with the moustache white, though no clear differences can be seen in the genitalia. It seems likely that Loew's three species from the Cape—*infumata* \mathcal{J} , *brachyptera* \mathcal{Q} and *stenura* \mathcal{J} —may be synonyms, but this cannot be determined until types can be examined.

No species of *Nusa* has yet been recorded from the Parc national du Garamba. The genus is unlikely to occur in the forested areas, but may be found in the savanna fringe close to the border with the Sudan. Besides the S. African *infumata*-complex, mentioned above, which extends as far north as the Katanga, there are five other described species from the Ethiopian Region : *nigrapex* Bigot from Natal; *dispar* Gerstaecker from Zanzibar; *vittipes* Bezzi from Somaliland; *ruficornis* Wulp from South Yemen and *albicans* Engel from Rhodesia.

PERASIS Hermann

Perasis Hermann, 1905 : 37 ; Engel, 1924 : 104-5. Type-species : Perasis sareptana Hermann, 1905, monotypic.

Saucropogon Hull, 1962: 103. Type-species: Perasis transvaalensis Ricardo, 1925, by original designation.

This genus was clearly defined by Hermann, but has been misinterpreted by Hull (1962:93), who removed the S. African *Perasis transvaalensis* Ricardo to be the type of his new genus *Saucropogon* (1962:103). Hull saw the type and other specimens of *transvaalensis* in the BMNH, and he also gives drawings of *sareptana* Hermann, though he did not see this species in the BMNH, where it is not represented.

The characters given by Hull (1962 : 103) to define *Saucropogon*, and to differentiate it from *Perasis*, concern mainly the wing-venation and the head-structure, and in fact are the very characters by which Hermann himself defined *Perasis* (1905 : 37). Hermann's fig. 28 shows the venation that Hull says is characteristic of Saucropogon. It seems evident that Hull has based his interpretation of *Perasis* on specimens that were not P. sareptana Hermann, since, among other things, he says that they have lateral bristles on all the abdominal segments, whereas Hermann's *Perasis* has bristles on the first segment only.

The type material of *transvaalensis* Ricardo agrees with Hermann's definition of *Perasis*, and must therefore revert to that genus. This makes *Saucropogon* Hull, type *transvaalensis* Ricardo, an absolute synonym of *Perasis* Hermann.

The species of *Perasis* are few and poorly known, scattered from Transcaspia across North Africa. Hermann (1920: 177) gave a list of four names in addition to the type-species: *postica* Becker and *violacea* Becker, both from Algeria; *Dasypogon maura* Macquart from Oran; and *Perasis meridionalis* Hermann from the Transvaal. Engel (1925:104-5) explained that this last name was a *nomen nudum*, no description having been published, and that it appeared to refer to specimens in Hermann's collection which at the time Engel saw them bore the manuscript name *capensis*. In the same year Ricardo (1925: 245) described *Perasis transvaalensis* from the Transvaal, and also recorded *meridionalis* Hermann as a *nomen nudum*.

The theory that Dasypogon maura Macquart, 1849, is really a Perasis appears to come from Hermann (1920 : 177) but he gives no reasons for believing this. Bigot (1878 : 221), in whose collection the type was deposited, thought that it might belong to Habropogon.

No *Perasis* is known to me from within the boundaries of the Parc National du Garamba, but the BMNH possesses a specimen from the Bunyoro district of Uganda that is specifically distinct from *transvaalensis*, and Monsieur François collected a number of the same species from Urundi.

Perasis carpenteri sp. n.

Closely allied to *Perasis transvaalensis* Ricardo, but with several constant colourdifferences. Most obviously, the pleura are uniformly covered with yellow-grey tomentum over a black and red ground colour ; whereas the pleura of *transvaalensis* are distinctly striped, with the anterior-facing areas of mesopleuron and sternopleuron shining black through thin brown tomentum, and the posterior-facing areas covered with thick yellow-grey tomentum. In *carpenteri* the whitish hind margins of the abdominal segments are uniform in breadth, whereas in *transvaalensis* they are expanded laterally and constricted in the middle.

 \bigcirc Head black. Frons and face with a dense tomentum or pile, which is white when the light falls from one direction. Moustache limited to about ten strong black bristles on mouth-margin and a few scanty hairs above this; most of face with tomentum only, no strong hairs or bristles. A few white hairs in beard, otherwise hairs and bristles of head are black. Antennae black or a little reddish, palpi and proboscis black, all with black bristles.

Thorax. Mesonotum black, reddish only on humeri and postalar calli. These areas have some whitish tomentum, which spreads across hind margin of mesonotum, immediately before scutellum. Mesonotum otherwise with very short, adpressed, dark brown hairs ; scutellum, in contrast, with yellowish adpressed hairs. Pleura reddish in ground colour, but with a big black area anteriorly on meso- and sternopleura ; the whole pleural area covered uniformly with yellowish grey tomentum, without the rather bare vertical stripe that is seen in *trans-vaalensis*. Metapleural tuft of black bristles.

Abdomen. Dorsum dull black, obscured by very short, adpressed, black hairs. Each segment posteriorly with a narrow band of uniform width, reddish in ground colour, with whitish tomentum. Venter similar, black hairs rather longer.

Legs. Coxae reddish in ground colour, with pale yellowish hairs. Femora black with short black hairs ; tibiae and tarsi dull reddish, covered with yellowish white hairs, but all legbristles black.

Wings. Veins black, not partly yellowish as in *transvaalensis*. Fairly uniformly stained brown, only slightly paler towards wing-margin. Venation as in *transvaalensis*, but with stalks of closed cells a little longer.

Length. Body 13 mm; wing 11 mm.

Q Generally similar, but with a few differences. Frons and face with more yellowish white hairs, especially in space between membrane and bases of antennae. Mesonotum covered with adpressed yellowish grey hairs like those of scutellum, and with a very narrow median line and a pair of postscutellar spots formed from dark brown hairs. Femora dull reddish in ground colour and covered with adpressed pale hairs instead of dark.

Holotype 3. UGANDA : Bunyoro, v.1928 (G. D. H. Carpenter) (BMNH). Paratypes. URUNDI : Kinanga, Ruzizi, 3 3, 8 Q, xi.1951 (F. J. François) (FJF).

HOPLISTOMERUS Macquart

Hoplistomerus Macquart, 1838: 59, Oldroyd, 1940: 307. Type-species: Laphria serripes Fabricius, 1805, monotypic.

In 1940 (loc. cit.) I published a synopsis of the species of this genus, demonstrating how the genus extends over the Ethiopian Region, with the exception of the equatorial forest. A miscellany of species exists in eastern Africa, from Lake Nyasa to the Red Sea, and from this nucleus one species, *H. serripes* Fabricius, has spread through the northern savannas to the Gambia, while another, *H. nobilis* Loew, goes southwards to the Cape and S.-W. Africa.

The presence of a species of *Hoplistomerus* in the Parc National du Garamba is therefore rather surprising, until one looks at the description of the localities concerned : 483—savane arborescente, sur les herbes ; 529—galerie forestière séche ; 3282—savane arborescente ; 3298—herbacées sur le pourtour d'une prairie. In localities such as these a savanna fauna is able to establish itself within the confines of the Parc.

Hoplistomerus garambensis sp. n.

(Text-figs 26, 27)

Most closely resembles *H. erythropus* Bezzi, from Somalia, from which species it differs in having black stripes on the femora; in the abdominal colouring, which is more normal for the genus than it is in *erythropus*; and in the male genitalia. (Text-figs 26, 27).

S Head. Black, obscured by thick, yellowish tomentum, except for a bare patch of variable extent in centre of face. Hairs and bristles all yellow or whitish. Antennae blackish or dull reddish, with yellowish hairs. Palpi pointed and rather swollen, with hairs mainly black, some

yellow ; proboscis black with silvery hairs at base (part of beard) and deep yellow ones at apex. Beard silvery, occipital bristles yellow.

Thorax black. Mesonotum heavily punctured, with little or no tomentum, but covered with golden yellow hairs, white at sides ; a row of 5–6 supra-alar and one postalar bristles yellow or whitish, otherwise dorsum without bristles. Scutellum covered with yellow tomentum and very short, golden yellow hairs ; a deep, transverse groove is bare, shining black ; no marginal bristles. Pleura black with thick white tomentum ; meso- and sternopleura with a large shining black area.

Abdomen black. Each segment narrowly shining black basally, otherwise covered with long, adpressed, curled, golden yellow hairs. Laterally a patch of these adpressed hairs is silvery white. First five complete segments each has 1-4 strong bristles laterally. Venter rather bare, black-brown, with thin grey tomentum and sparse pale hairs. Male genitalia as in Text-fig. 27.

Legs. Coxae like pleura, black with thick white tomentum and white hairs. Trochanters, femora, tibiae and tarsi orange, only femora with dorsal black stripe over middle part of their length. Short clothing hairs white, even on tarsi ; bristles yellow. Ventrally on hind femora the tubercles as usual in *Hoplistomerus*.

Wings. Venation normal for genus. Marginal cell closed on margin, vein R_{2+3} recurrent. First and fourth posterior cells closed with short stalk. Dark microtrichiae form the usual two cross-bands across base of discal cell, and from radial fork to apex of wing, the two united posteriorly. Veins blackish brown in dark areas, orange in clear patches.

Length of body 13 mm ; of wing 11 mm.

Holotype J. P.N.G., 3282, Ppk. 14/g/2, 4.iv.1952 (IPNC).

Paratypes. Same data as holotype, I Q; 483. I/a/I. I Q, 5.v.1950; 422, I/a/3. I Q, 17.iv.1950; 529 Akam, 19.v.1950 (IPNC).

TRICHARDIS Hermann

Trichardis Hermann, 1906 : 137 ; 1920 : 177. Type-species : Laphria testacea Macquart, 1838 (=Trichardis testacea Hermann, 1906), by designation of Hermann, 1923.³

Strobilothrix Becker, 1907: 42. Type-species : Strobilothrix albipila Becker, 1907, monotypic.

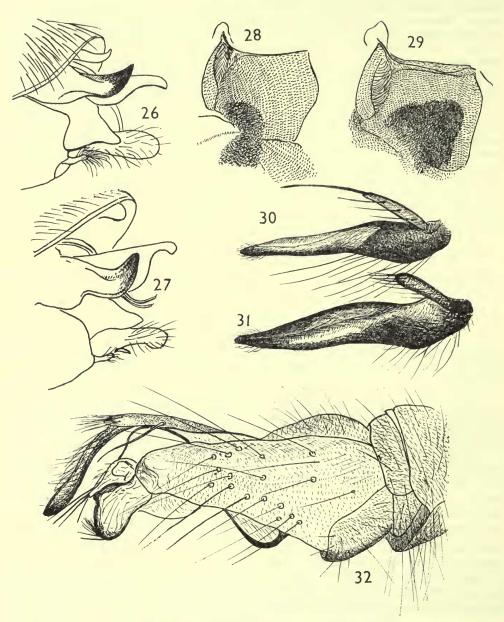
Closely allied to *Hoplistomerus* Macquart, and not easy to separate clearly from that genus. Hermann's first two species, *testacea* and *picta*, were distinguished by the absence of the conspicuous wart-like excressences beneath the hind femora, but in other species which he later assigned to *Trichardis* the ventral spines arise from smaller, but distinct protuberances. As I recorded in 1940 (p. 310, *note*), the late Dr S. W. Bromley considered that *Trichardis* was only a subgenus of *Hoplistomerus*, but I am still not sure that I agree with this view. In general facies the two genera seem to be distinguishable, *Hoplistomerus* being more robust. Probably they can be formally separated by the different relative length of the first segment of the hind tarsus, as well as by the male genitalia, *Hoplistomerus* having the claspers prominent and usually hooked.

Since *Trichardis* does not appear to penetrate into the Congo Basin proper, this is hardly the place in which to attempt a detailed study of the genus, but one new species from the south-eastern uplands may be noted.

³ Engel (1924 : 106) stated categorically that *Laphria testacea* Macquart was a *Storthyngomerus*, and was quite different from *Trichardis testacea* Hermann. This is not in agreement with Macquart's original description, in which the antennae are described as 'assez courtes'. Dr. L. Tsacas has very kindly examined Macquart's type in Paris and confirms: (a) that it is definitely a *Trichardis* and not a *Storthyngomerus*; and (b) that it agrees with the description of *Trichardis testacea* Hermann.

Trichardis katangaensis sp. n.

(Text-fig. 29)



FIGS 26-32. 26-27, Hoplistomerus spp., 3 genitalia. 26, H. erythropus; 27, H. garambensis. 28-29, Trichardis spp., left mesopleuron. 28, T. cribrata; 29, T. katangaensis. 30-32, Andrenosoma spp. 30, A. complexa, proboscis and palp; 31, A. boranica, proboscis and palp; 32, A. complexa, male genitalia.

Very closely resembling T. cribrata Loew, but distinguished by the much larger bare area of the mesopleuron (Text-figs 28, 29), and by the larger and more conspicuous white patches in the posterior angles of the abdominal tergites.

 δ^{Q} Head. Black with thin white tomentum. Four strong black ocellar bristles; sides of frons with one or two short black bristles, but also softer white ones. Moustache consisting of a few black bristles on mouth-margin, and longer, silvery hairs and fine bristles rooflike above these, extending at sides almost up to bases of antennae. Centre of face with some fine black hairs. Antennae may be entirely black, or more or less reddish, especially first two segments. Proboscis and palpi black, but with hairs mainly silvery. Fine, silvery hairs in beard and over occiput, but postocular bristles strong and black.

Thorax. Mesonotum shining black, with little tomentum except for a white patch adjoining humeri, and a narrow, transverse band immediately before scutellum. Covered uniformly with short, adpressed, golden yellow hairs, with short, erect, fine, black hairs distributed among them. Scutellum with very fine black marginal bristles. Pleura heavily covered with white tomentum, only mesopleuron with a large, shining black area (Text-fig. 29).

Abdomen shining dark red-black, covered with rather sparse, silky silvery hairs, each hair arising from a definite puncture. A broad posterior band of white tomentum on each segment is broadly interrupted, or reduced to a pair of widely separated lateral patches. Venter dark reddish, with white hind margins and whitish hairs.

Legs. Hind femora markedly swollen, and with considerable tubercles. Femora shining black; trochanters, tibiae and tarsi dull reddish. Legs covered with silvery hairs; bristles mostly yellow, but black ones more numerous on tarsi.

Wings almost uniformly pale greyish, no obvious pattern. Marginal cell closed on margin, vein R_{2+3} recurrent; first and fourth posterior cells closed, with short stalk.

Length of body 10 mm ; of wing 8 mm.

Holotype J. LULUA : Kapanga, x.1932 (F. G. Overlaet) (MRAC).

Paratypes. KATANGA : Elisabethville, I \Diamond , xi.1911 (*Miss. Agric.*) ; TANGAN-IKA : Sunkutu, 1140 m, Km 96, Rte Pepa-Moliro, I \Diamond , xii.1953 (*H. Romans*) (MRAC).

HYPERECHIA Schiner

Hyperechia Schiner, 1966: 673; Marshall, 1902: 287–584; Grünberg, 1907: 515–524; Thorpe, 1927: 177–185; Lamborn, 1927: 44–47; Engel, 1929: 147–162 (larva); van Bruggen, 1962: 313–317. Type-species: Laphria xylocopiformis Walker (an Indian species), by original designation.

Flies of this genus are well-known because of their close resemblance to Xylocopid bees. They are short and broad, with strong legs fringed with long pile, and with wings broad basally, pointed at apex. The head is broad, the third antennal segment long and clavate. The flattened, leaf-like palpi are characteristic of those genera which Hull (1962 : 349) unites into the tribe Andrenosomini. The genus *Hyperechia* is characterized by general appearance rather than by any diagnostic character. *Systropalpus* Hull (1962 : 355), mentioned in the key to genera, is based on a single male from Ethiopia, which I have not seen.

The various species differ in the distribution of white, yellowish or reddish pile on the mesonotum, scutellum, abdominal segments I-3, and legs. Several species bear a startlingly close resemblance to particular species of *Xylocopa*, and to this

extent they may be said to mimic the bees, especially as the larva of the fly lives in the burrows of the bee, and the adult flies are found in association with the adult bees. Yet *Hyperechia* adults are often taken in association with *Xylocopa* other than the species to which they bear a mimetic resemblance. An example of this occurs in the collections from the Musée du Congo, where a specimen of *Xylocopa flavorufa* Deg. from Abok in the Ituri is labelled as having been taken in association with *Hyperechia imitator* Grün. ; but the species of *Hyperechia* which imitates this species of *Xylocopa* is *H. bomboides* Loew, which occurs at Tchad and similar drier regions.

The following key is presented as an interim guide to the species, more particularly those of the Congo Basin, or which might occur there.

KEY TO SPECIES OF HYPERECHIA

I	Sides of abdomen with pale yellowish or white fringes
_	Sides of abdomen with black fringes, at least on posterior segments
2	Mesonotum and scutellum with black hairs only
	consimilis Wood, 1874: 158 (usambarae Lichtw., 1907: 85)
_	Pale hairs on, or just before, scutellum
3	A conspicuous tuft of pale hairs on scutellum, with black marginal bristles
	<i>floccosa</i> Bezzi, 1908 : 377 (p. 251)
-	A transverse band of pale hairs just before scutellum, but scutellum itself has black
	hairs, and very strong black marginal bristles. <i>nigrita</i> Grünberg, 1907 : 520 (p. 251)
4	Thorax and abdomen both uniformly black, with black hairs. Female with white
	fringe on fore tibia, male with black fringe . <i>imitator</i> Grünberg 1907 : 522 (p. 251)
	Thorax, or abdomen, or both with conspicuous white, yellow or red-brown hairs . 5
5	Thorax and abdomen both with some yellow hairs 6
_	Either thorax or abdomen with yellow hairs, but not both (except in <i>marshalli</i> , where
	the first abdominal segment has a few sparse yellow hairs) 8
6	Thorax with yellow hairs on posterior margin, and segments 1-3 of abdomen also
	with yellow hairs nigripennis Wied., 1830 : 646 (albifasciata End., 1930 : 69)
	Thorax with yellow hairs, but only segments 1 or 1-2 of abdomen with yellow hairs 7
7	Mesonotum and scutellum entirely covered with yellow hairs. Wings dark brown,
·	with base conspicuously paler hirtipes Fabricius, 1805 : 158
_	Only posterior third or quarter of mesonotum with yellow hairs. Wings uniformly
	dark brown, not obviously paler basally
	bifasciata Grünberg, 1907 : 579 (pellitiventris End., 1930 : 68) ⁴ (p. 250)
8	Hairs of mesonotum uniformly pale bomboides Loew, 1851:21
	Thorax black with some yellow or red-brown hairs
	marshalli Austen, 1902 : 341 (fuelleborni Grünberg, 1907 : 521)

Hyperechia bifasciata Grünberg

Hyperechia bifasciata Grünberg, 1907 : 519.

LULUA : Luluabourg, $1 \heartsuit (P. Callewaert)$; Kapanga, 2 Å, v.1933 (G. F. Overlaet); Kanzenza, $1 \heartsuit , 1932$ (R. P. Lefebure). KATANGA : du lac Moero au lac Bengwelo, $1 \And (Dr \ Gheral)$; Kiambi, $1 \heartsuit , 5-15.v.1931$ (G. F. de Witte); Elisabethville, $1 \heartsuit , 25.4.27$ (Dr M. Bequaert). SANKURU : Tschombe-Ste Marie, $1 \heartsuit , 1948$ (Rév. P. Gustave); Komi, $1 \heartsuit , vii.1928$, Lodja (J. Ghesquière); Mukabe-kesari, $1 \heartsuit , 1939$

⁴ bifasciata and pellitiventris may be distinguishable by small genital differences.

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(R. P. de Donckere). TANGANIKA : Kiambi, I \mathcal{Q} , 23.iv.1931 (G. F. de Witte). ITURI : Bunia, 2 \mathcal{Q} , vii.1937 (H. J. Brédo) (MRAC). URUNDI : Kitega, I \mathcal{Q} , 18.i.52 ; I \mathcal{J} , 1.1953 (FJF).

Hyperechia floccosa Bezzi

Hyperechia floccosa Bezzi, 1908: 377.

LULUA : Kapanga, I 3, v.1933 (G. F. Overlaet). BAS-CONGO : Kisantu, I 3, 29–30.xii.1952 (P. Basilewsky) ; Matadi à Léopoldville, I \bigcirc , II.xi.1936 (J. Vrydagh). Kunkungum N'Kele, I 3, I \bigcirc , 16.viii.1944 (C. Schouteden) (MRAC).

Hyperechia imitator Grünberg

Hyperechia imitator Grünberg, 1907: 522.

BAS-CONGO : Moanda, $1 \Leftrightarrow 1933$ (R. P. Bittremieux) ; Kisantu, $1 \Leftrightarrow 29-30.xii.1952$ (P. Basilewsky) ; BOLOBO : Makamndelu, N'Kele, $2 \Leftrightarrow 1938$ (Dr Schouteden) ; Bumbuli, $1 \circlearrowleft, 1915$ (R. Mayné). ITURI : Abok, Lundigi, $1 \Leftrightarrow 1928$ (Ch. Scops) (MRAC).

Hyperechia nigrita Grünberg

Hyperechia nigrita Grünberg, 1907 : 520.

BAS-CONGO : Kimwenza, I 3, I.iv.1956 (R. P. van Eyen) ; Kisantu, I 3 (Rév. P. Regnier). KASAI : Luebo, I φ , iii.1931 (J. P. Colin). UELE : Bambesa, I φ 10.iv.1937 (J. Vrydagh) (MRAC).

PROAGONISTES Loew

Proagonistes Loew, 1857: 362, 367; 1860: 170; Bromley, 1930: 209–224. Type-species: Proagonistes validus Loew, monotypic.

These large, aggressive-looking robber-flies are distinguished by their powerful, sickle-like proboscis, usually upturned at the tip, and by their bare, elongate appearance, mimicking some of the bigger wasps, especially Psammocharid wasps of the genus *Salius*.

Neave (quoted by Bromley, 1930 : 213) associated flies of this genus with forest, or at least with woodland, and wrote : 'I have never found them except in association with trees.' Specimens from the Congo Basin suggest that *Proagonistes* is not typical of high forest, but occurs along the great rivers, on the forest fringe, and in savanna woodland.

The genus is quite closely related to Andrenosoma Rondani, and it is not easy to indicate constant differences between the two genera, though each has a recognisable facies. Proagonistes is more elongate, with long, slender legs, and cylindrical abdomen which is scarcely constricted basally. In the wing the first posterior cell is wide open, with veins R_5 and M_1 parallel, or even diverging slightly. Andrenosoma is typically more bee-like, the abdomen broader, and often constricted basally; the hind legs stouter, with distinct long hairs on tibiae and tarsi in addition to stout

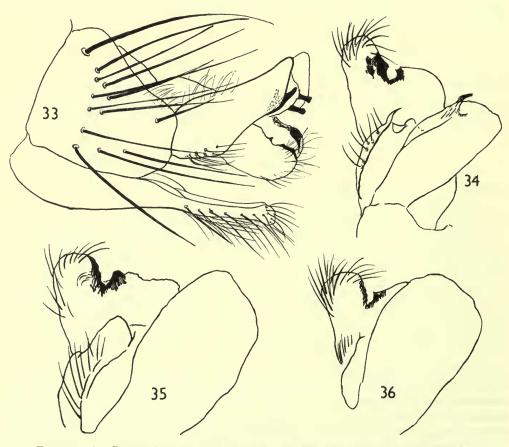
bristles; and in the wing the first posterior cell is narrowed, often closed and stalked.

Bromley (1930 : 209–224) published a revision of the genus *Proagonistes*, to which may be added two species of hitherto doubtful affinities : *Nusa africana* Ricardo, and *Proagonistes igniferum* Engel and Cuthbertson, both of which have at some time or other been assigned to *Andrenosoma*. One new species from the Congo Basin is described in the present paper.

The following key is modified from Bromley (1930 : 214), and includes all the African species.

KEY TO AFRICAN SPECIES OF PROAGONISTES

- Wings orange, apex broadly brownish . . apicalis (Curran), 1927 : 6 (p. 254)
 Wings without noticeably darker tip, usually completely brown, or with clearer



FIGS 33-36. Proagonistes spp., 3 genitalia. 33, P. lampyroides ; 34, P. neavei ; 35, P. athletes ; 36, P. rufibarbis.

2	Hind tarsi with fine blackish hairs, causing them to appear black dorsally. Facial
	and pleural hairs deep yellow or orange. Abdomen deep purplish brown with
	reddish hairs leoninus Bromley, 1930 : 216 (p. 254)
-	Hind tarsi with orange hairs only
3	Scutellum uniformly black
_	Scutellum not uniformly black
4	Hind femora reddish or yellowish
<u> </u>	Hind femora more or less black
5	Vestiture of head mostly black
_	Vestiture of head reddish or yellowish
6	Beard white. Antennae and facial knob black. Abdomen reddish
-	<i>africana</i> Ricardo, 1929 : 278
	Beard black. Antennae and facial knob red. Abdomen black
	<i>pliomelas</i> Speiser, 1907 : 358 (p. 255)
7	Moustache long and thick, straw-yellow. First two segments of abdomen with fine
1	white hairs at sides
_	Moustache reddish
8	
0	
_	Huge species, about 45 mm in length, hind legs extremely long (Madagascar)
9	
	gigantipes Bromley, 1930 : 219
-	Species about 30 mm in length (West Africa)
10	Occipital bristles black. Thorax black, but with slight brassy tinge, and covered
	with dark tawny down
	Occipital bristies reddish ; thorax black . rufibarbis (Fabricius), 1805 : 157 (p. 255)
II	Fore coxae with black hairs, beard black, or with some reddish hairs intermingled 12
_	Fore coxae with whitish hairs
12	Small species (about 27-28 mm long) ; beard black ; femora black with extreme
	apex reddish praeceps Walker, 1855 : 542
-	Huge species (over 40 mm long) ; beard black with some of the hairs reddish at
	base; hind femora black, apically reddish, more extensively reddish below than
	above
13	Thorax mostly black
_	Thorax broadly reddish anteriorly and along sides above wings; a reddish line on
	each pleuron
14	Hind femora mostly black
	Hind femora mostly yellowish, but apically black, especially dorsally
_	praedo Austen, 1909 : 57
15	Large, robust species (29–43 mm) ; beard reddish athletes Speiser, 1907 : 356
_	Smaller, slenderer species (23–31 mm) ; beard straw-coloured
_	<i>neavei</i> Bromley, 1930 : 223 (p. 255)
16	Dorsum of thorax orange, unpatterned, contrasting sharply with black-brown
	pleura and slightly shining, blue-black abdomen
	redimiculum Speiser, 1914: 7 (p. 255)
-	Dorsum of thorax orange with distinct black stripes and spots ; not contrasting
	sharply with pleura, which are patchily black and orange, obscured by white
	tomentum
17	Abdomen orange with orange hairs and bristles. Black longitudinal stripes of
,	mesonotum reaching scutellum and extending laterally into connecting black spots
	igniferum Engel & Cuthbertson, 1937 : 12
_	First five abdominal segments black, rest bright orange. Black longitudinal stripes
	of mesonotum not reaching scutellum, and not connected with any lateral spots
	lampyroides sp. n. (p. 254)
	<i>umpyones</i> sp. n. (p. 254)

Proagonistes apicalis (Curran)

Lamyra apicalis Curran, 1927 : 6 ; 1928 : 331. Proagonistes apicalis (Curran) Bromley, 1930 : 216.

LULUA : Kapanga, 1 3, ii.1934 (G. F. Overlaet). COQUILHATVILLE : Eala, 1 3, vi.1932 (A. Corbisier). STANLEYVILLE : Yangambi, 1 \mathcal{Q} , 30.vii.1959 (J. Decelle).

Proagonistes lampyroides sp. n.

(Text-fig. 33)

Shares with *P. apicalis* (Curran) and *P. redimiculum* Speiser the orange, blackbanded mesonotum, but is distinguished from *apicalis* by the wholly dark wings, and from *redimiculum* by the conspicuous red tip to the black abdomen. This involves the sixth and following segments, and the ovipositor is distinctly shorter than that of Q *redimiculum*.

 \bigcirc Head. Red. Ocellarium has a small, black patch running longitudinally, not transverse as in *redimiculum*. Frons otherwise rather bare and shining brown ; rest of head, including buccae and occiput, orange with orange tomentum, bristles and hairs ; only a small tuft of whitish hairs in beard. Palpi red with orange hairs. Proboscis red at base, shining black for most of its length, but with orange hairs. Antennae orange with orange hairs, third segment about twice as long as first two segments together.

Thorax. Orange with black pattern. On mesonotum a pair of longitudinal black stripes from anterior margin almost to reach scutellum; on each side a roundish black spot before transverse suture and an elongate triangular black spot posteriorly. Scutellum entirely orange. Sides of pronotum, propleuron, mesopleuron and sternopleuron with round black spots; otherwise pleura orange with tomentum that is mostly white, especially ventrally and posteriorly. Postnotum (' metanotum ') orange with a pair of black spots.

Abdomen. First five segments dorsally and ventrally black with black-brown tomentum and predominantly black short hairs ; some orange hairs laterally on tergites, where there are one or two orange bristles on all five segments. Sixth segment and posteriorly bright orange with orange hairs.

Legs. Coxae like pleura but with white hairs as well as white tomentum ; legs otherwise entirely orange, with orange or yellow hairs ; only claws apically black.

Wings. Entirely black-brown, with orange hairs on base of costa. Halteres orange. Length of body 23 mm; of wing 20 mm.

Holotype Q. GABON : Lambaréné, 1921 (E. le Moult) (MHNP).

Paratypes. Congo : Riv. de San Benito, 1 3 (Quivae). EQUATEUR : Bokuma, 1 9, vii.1932 (R. P. Lootens) (MRAC).

Proagonistes leoninus Bromley

Proagonistes leoninus Bromley, 1930: 216.

ILE DE SÃO THOMÉ : 1 Q (De Saeger ; S.A.R. Prince Leopold) (MRAC).

São Thomé is the type-locality of this species.

Proagonistes neavei Bromley

Proagonistes neavei Bromley, 1930 : 223.

UELE : Bambesa, 1 9, iii.1937 (J. Vrydagh) (MRAC).

Originally described from UGANDA, this is a robber-fly that may well occur in the Parc National du Garamba.

Proagonistes pliomelas Speiser

Proagonistes pliomelas Speiser, 1907: 358; Bromley, 1930: 217.

LULUA : Kapanga, 3 3, 1 9, xi.1932 (G. F. Overlaet). UELE : Bambesa, 1 3, 30.x.1933 (J. V. Leroy). LUALABA : Sandoa, 1 9, vi.1932 (G. F. Overlaet) (MRAC).

Described from the northern Cameroons, and known also from Ghana and Mayumbe.

Proagonistes redimiculum Speiser

Proagonistes redicimiculum Speiser, 1914:7; Bromley, 1930: 217.

COQUILHATVILLE : Eala, 19.X.1931 (H. J. Brédo) (MRAC).

Originally described from Tiko, near Victoria, in the Cameroons. The present specimen agrees closely with Speiser's description, except that the scutellum is entirely fire-red, instead of being black with a red tip. The rest of the colourpattern is so striking, with the bright red head, thorax and legs, coupled with black pleura, abdomen and wings, that I think we must accept the two as conspecific.

Proagonistes rufibarbis (Fabricius)

Laphria rufibarbis Fabricius, 1805 : 157. Lamyra rufibarbis (Fabricius) Curran, 1928 : 331. Proagonistes rufibarbis (Fabricius) Bromley, 1930 : 220.

LULUA : Kapanga, 5 3, 3 \mathcal{Q} , 1932–3 (G. F. Overlaet). STANLEYVILLE : Basoko, 1 3, iv.1948 (P. L. G. Benoit).

Curran (loc. cit.) recorded this species from Malela.

ANDRENOSOMA Rondani

Andrenosoma Rondani, 1856 : 160 ; Hull, 1962 : 349. Type-species : Asilus ater Linnaeus, 1758, monotypic.

The affinities of this genus are discussed briefly under *Proagonistes*. Andrenosoma occurs in all the major zoogeographical regions, but is an enigmatic genus everywhere ; the huge *Andrenosoma* of Australia and South America have little obvious affinity with the three distinctive Palaearctic species. The species of tropical Africa have been particularly obscure, since they have never numbered more than one or two, and these have been questioned, and in some cases transferred to other

genera ; e.g. *africana* Ricardo and *igniferum* Engel & Cuthbertson to *Proagonistes* in the present work.

At present only two remain, separable as follows :

KEY TO SPECIES OF ANDRENOSOMA IN TROPICAL AFRICA

- Mesonotum tomented, with a pattern of dark brown stripes on an ashy grey ground. Post-vertex entirely covered with grey tomentum. Proboscis and palpi as in Text-fig. 31 boranica (Corti)
 Mesonotum with a broad, bare, median stripe, flanked by double spots, which are
- Mesonotum with a broad, bare, median stripe, flanked by double spots, which are also bare and shining. Post-vertex with a large, triangular, bare, shining area. Proboscis and palpi as in Text-fig. 30; male genitalia as in Text-fig. 32

complexa Sp. n.

Andrenosoma boranica (Corti) was described from Ethiopia, and is also known from the savannas of West Africa. (Text-fig. 31).

Andrenosoma complexa sp. n.

(Text-figs 30, 32)

Distinguished from *boranica* by the characters given in the key. The unique specimen is somewhat teneral, but even so its mahogany-brown colour is probably natural.

& Head. A pronounced, rounded facial tubercle occupies half of height of face; face and frons with white tomentum and long white hairs at sides, but bare in middle line, both below antennae and in a median frontal area which includes ocellar tubercle and a large triangular area of post-vertex. Moustache consists of about a dozen long, black bristles, flanked by long white hairs from sides of face. Ocellar tubercle with a pair of long, backwardly curved black bristles, and numerous black bristles on upper occiput; lower occiput and buccae with soft, silvery hairs. Palpi and proboscis as in Text-fig. 31: proboscis slender, more pointed than in *boranica*, palpi smaller, but still flattened, scale-like as typical of genus; hairs at tips of palpi and bulbous base of proboscis longer than in *boranica*. Antennae black, with reddish joints, black bristles and white hair; clavate third segment about as long as sum of first two segments.

Thorax in ground colour mahogany-brown, with white tomentum, which leaves bare areas dorsally; on mesonotum a broad median stripes, complete from front to rear, flanked by broad sublateral stripes extending from rear to just in front of transverse suture. Scutellum with white tomentum basally and a bare, shining tip. Hairs and bristles fine, long, black; scutellum with six marginal bristles. Pleura entirely covered with white tomentum : all sclerites with long, fine white hairs, mixed with a few black ones dorsally; mesopleuron with a single strong black bristle.

Abdomen also mahogany-brown in ground colour, with white tomentum thin dorsally, but never quite absent; dorsally with fine black hairs, laterally and ventrally with longer white hairs. Male genitalia as in Text-fig. 32, long and complex, with long black hairs and bristles.

Legs. Coxae covered with white tomentum ; rest of legs mahogany-brown with abundant long, silky hairs, which are black dorsally on tibiae and tarsi, and tips of femora, white elsewhere.

Wings. Uniformly faintly greyish, without darker colour ; veins dark brown, marginal and fourth posterior cells closed, with long stalk, anal cell with short stalk ; first posterior cell fully open, veins R_5 and M_1 running parallel to margin.

Length of body 19 mm ; of wing 14 mm.

Holotype J. BAS-CONGO : Moerbeke (P. Domage) (MRAC).

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Tribe ATOMOSIINI

The tribe Atomosiini is a compact group of Asilidae, which look rather like small solitary bees. They are united by a peculiarity of wing-venation, in which the veins forming the posterior, apical angle of the discal cell form a cross +, or a displaced crossing $\frac{1}{1}$. Though apparently trivial, and occasionally to be found in other tribes, this detail is a very constant point of recognition. Hull (1962 : 369) points out that almost diagnostic of this tribe is the sclerotization of the area immediately behind the hind coxae, but this detail is not so easily observed as the wing-venation.

Atomosiini are divided into a very large number of genera, most of which are confined to South America. Hermann (1912) established most of them. These genera are justified by the number of structural variations that occur, especially in the head and antennae, but it is doubtful how far these differences are of generic value. The tribe is generally placed in the subfamily Laphriinae, but a much fuller study is needed to establish its true relationships. (cf. Karl, 1959).

In the Ethiopian Region only a very few species of Atomosiini have been described. Hermann created the genus *Goneccalypsis* for *Atomosia argenteoviridis* Hermann from the Transvaal. Engel (1929) described *Loewinella nigripes* from Southern Rhodesia as a variety of the Palaearctic *L. virescens* (Loew), but it seems clear that this should be treated as a distinct species. *Loewinella aphaea* Séguy (1950) comes from the oasis of Aïr (Agades) in the Sahara, and Curran (1927) described an *Atractia arcuata* from Stanleyville.

The last species is well represented in the collection of the Musée du Congo, and is not an *Atractia* (as, indeed, Curran suspected) ; it is clearly congeneric with *Loewinella nigripes* Engel.

Loewinella arcuata (Curran) comb. n.

Atractia arcuata Curran, 1927 : 5.

COQUILHATVILLE : I ex., IO.XI.1931 (*Lt. Doman*) ; Eala, 8 ex., XI.1931–V.1932 (*H. J. Brédo*) ; I ex., 22.VII.1914 (*R. Mayné*) ; I ex., XI.1934 (*J. Ghesquière*). STANLEYVILLE : 22 ex., II-III.1928 (*A. Collart*) (MRAC).

Tribe **SAROPOGONINI**

Modern attempts to improve upon Loew's division of the Asilidae into four subfamilies find most difficulty in subdividing Loew's Dasypogoninae. Workers in each region tend to give prominence to genera that are peculiar to their own region : thus G. H. Hardy (1934), a pioneer of tribal classification in Asilidae, erected tribes Phellini, Chrysopogonini and Brachyrrhopalini that are all restricted to Australasia; while Carrera (1952) recognized a tribe Megapodini for certain S. American genera.

The world classification of Hull (1962) goes further than any other, breaking the old Dasypogoninae into twelve tribes. At the present stage of knowledge of the

African Asilidae it is not profitable to comment critically upon this arrangement, beyond saying that it appears to raise problems in placing certain genera. I shall therefore continue to use the classification set out in my earlier paper (Oldroyd, 1963), and divide the old Dasypogoninae into three tribes : Saropogonini, Stichopogonini and Xenomyzini. Of these, Saropogonini are recognized by having the prosternum completely separated from the pronotum, and appearing as a small sclerite surrounded by membrane. This is usually visible from the side, or below, though it may be necessary first to brush off some of the obscuring hairs.

Out of the 26 genera included in my key to African Saropogonini (Oldroyd, 1963:6) the present collection contains only eight, together with one new genus, *Dogonia*. There is therefore little point in reprinting the key, but a few notable absences may be recorded. *Sisyrnodytes* and *Acnephalum*, *Saropogon* and *Stenopogon* are generally associated with somewhat arid terrain; *Habropogon*, *Holopogon* and *Heteropogon* are essentially subtropical or Mediterranean genera: *Hypenetes*, *Lycostomus*, *Teratopus*, *Hermanella* and *Spanurus* are found in more southerly parts of Africa, although any one of these may yet be found within the Congo Basin.

NEOLAPARUS Loew

Laparus Loew, 1851 : 4 ; [nec Laparus Billberg, 1820, Lepidoptera]. Type-species : Laparus tabidus Loew, by original designation.

Neolaparus Williston, 1889 : 255 [new name].

Cenopogon Wulp, 1898 : 120. Type-species : Cenopogon bifidus Wulp, monotypic.

Specimens of *Neolaparus* are abundant in collections of African Asilidae, and are extremely difficult to classify. Structurally they are remarkably uniform. The face bulges a little below the antennae, and projects as a rim on the epistoma, but has no clearly defined knob, and the moustache is very sparse, generally consisting of two or four stiff bristles with at most a few fine hairs. Only rarely is there a more extensive moustache. The third antennal segment is usually clubbed, and is elongate only in one or two species. The male terminalia are fairly elaborate, and show some inter-specific variation, but only rarely is this decisive enough to be diagnostic. The wing-venation is primitive, and remarkably uniform.

The species therefore are mostly defined by colour and pattern, chiefly of the thorax and abdomen. These are reasonably reliable in well preserved specimens, but unfortunately are quickly ruined by bad preservation. A great majority of all specimens available for study are badly greased, and one can only guess at their natural appearance.

As long ago as 1860 Loew made very similar comments about the difficulty of classifying species of this genus, which he divided into two sections, one with only two strong bristles on the epistoma, and the other with four or even six. Bromley (1956 : 140), while using this arrangement in his key, wrote : 'This is not a good grouping, as the number of bristles may vary within a species'. There is, nevertheless, evidence of a division of the genus into two groups of species, the one consisting of larger and darker flies, the other more fragile and paler in colour. The first group have the alula of the wing larger, and with a distinct posterior angle,

whereas the flies of the second group have the alula smaller, and with its posterior margin only slightly convex.

Hull (1962:256) says that: 'Both sexes of *Lagodias* may be separated from the related *Neolaparus* and also from *Pegesimallus* by the absence of the ventral hypopleural patch of dense pile'. This is true of the type-species of each genus, but is not a valid generalization. This patch of pile is widespread among many genera of this and other tribes, e.g. *Laphria*, but it appears sporadically, and may be present or absent in species that are clearly congeneric.

The species of *Neolaparus* are in such confusion that it seemed better in the present paper to mention only those few specimens that come from the Parc National du Garamba, deferring a more general account of the *Neolaparus* for a more comprehensive revision. Curran's key (1934) is a useful guide if it is used with caution, but no really satisfactory key to the species of *Neolaparus* has yet been produced.

Neolaparus ophion Speiser

Neolaparus ophion Speiser, 1910: 86.

GARAMBA NATIONAL PARK : P.N.G., 527, I/o/I, $I \Leftrightarrow 17.v.1950$; 766, I/o/I, $I \Leftrightarrow 21.viii.1950$ (G. Demoulin); 786, I/o/I, $I \Leftrightarrow 25.viii.1950$ (G. Demoulin); 3480, Inimvua, $I \approx ..., 16.v.1952$; 764, $I/o/7, I \Leftrightarrow 19.viii.1950$ (G. Demoulin); 349, I/o/I, $I \Leftrightarrow 28.iii.1950$; riv. Abita, $I \Leftrightarrow 1.iv.1954$ (C. Nebay) (IPNC).

Neolaparus angusticornis Ricardo

Neolaparus angusticornis Ricardo, 1925: 245.

GARAMBA NATIONAL PARK : P.N.G., 352, I/0/3, I 3, 31.iii.1950 ; 1588, II/hc/4, I \Im , 20.iv.1951 (*J. Verschuren*) ; 1849, II/hc/4, I 3, 31.v.1951 (*J. Verschuren*) ; 3328, Pidigala, I \Im , 23.v.1952; 1494, II/fd/17, I 3, 4.iv.1951.

Neolaparus munroi Bromley

Neolaparus munroi Bromley, 1936 : 142.

GARAMBA NATIONAL PARK : P.N.G., 1464, II/fd/2, 1 J, 28.iii.1951 ; 3328, Pidigala, 2 J, 1 Q, 23.iv.1952 ; 3476, Aka/2, 19.v.1952 ; 3488, Inimvua, 2 J, 20.v. 1952 ; riv. Abita, 1 J, 1 Q, 1.kv.1952 (C. Nebay) (IPNC).

Neolaparus decoratus sp. n.

A well-marked species, of distinctive pattern. Resembles *ophion* Speiser in having microtrichiae entirely covering the wing, and not confined to an apical area, but differs in having a clear-cut abdominal pattern, and in the bicoloured, strongly clubbed antennae.

 \bigcirc Head. Fronto-facial area broad, not greatly narrowed at antennae, black in ground colour, but obscured by thick tomentum. On frons this tomentum is brassy brown, more yellow along eye-margins and just above antennae, where there is a short, vertical black stripe. Face quite prominent at epistoma, but triangular in profile, with flat upper surface, tomentum yellow-

brown, white laterally ; only two strong, pale bristles on epistoma, and a few short, pale yellow hairs. Probosics and palpi black, with black hairs. Antennae with first two segments yellow-brown, short, subequal, with yellow bristles ventrally, black ones dorsally ; third segment strongly clavate, pale yellow at base, black on expanded portion. A pair of yellow postvertical bristles. Occiput with yellow tomentum and a few yellow hairs.

Thorax olive-brown, with indistinct, divided, median stripe, outlined by very narrow dark brown lines, as in ophion. Very short black hairs, each arising from a dark spot, run along lines of dorsocentrals, and cover a large posthumeral area, as well as the rather paler lateral margins of the mesonotum. Bristles yellow, very strong, restricted to one notopleural, one supra-alar, and one postalar. Scutellar disc concolorous with mesonotum, but rim dark red-brown ; short hairs in line with dorsocentrals, but no bristles.

Pleura with brassy yellow tomentum, through which the ground colour is visible : pronotum and propleuron, mesopleuron, sternopleuron, hind coxae and a little of the other coxae show a dark ground colour ; pteropleuron, mesopleuron and metanotal callosities have a yellow ground.

Abdomen black, with a dull sheen, and therefore contrasting strongly with thorax. Dorsally first segment and base of second with bronze tomentum, leaving bare the bulla on the second segment (a feature of *Neolaparus* and *Lagodias*). Segments 2–6 each has a pair of spots of white tomentum : on second segment these are short, transverse lines, and occur at half-way position ; on each succeeding segment they become further forward until on sixth they are small spots on fore margin. These segments also have on extreme lateral margins a spot on anterior border and a short band in posterior angle. Hairs very short, very scattered, black. Venter shining black with grey hind margins. Segments 7, 8 shining black, forming an ovipositor.

Legs. Long, slender, all femora and tibiae slim on basal half, distinctly thickened towards tip. Generally chestnut-brown in colour, but femora pale on narrow basal stalk and blackbrown over thicker apex. Clothing hairs black, long bristles yellow.

Wings. Venation normal, all cells open. Microtrichiae cover entire wing membrane, as in ophion, and do not form a grey tip. Alula very shallow, gently curved.

Length of body 13 mm ; of wing 11 mm.

3 not yet known.

Holotype Q. GARAMBA NATIONAL PARK : P.N.G., 3287, II/gc/6, 5.iv.1952 (IPNC).

LAGODIAS Loew

Lagodias Loew, 1857 : 345 ; 1860 : 69. Type-species : Lagodias albidipennis Loew, 1857 ; by monotypy.

The males of *Lagodias* are conspicuous in having some part of the legs, and especially of the hind legs, with a spectacular fringe of flattened, scale-like hairs. Apart from this feature they are typical *Neolaparus*, and the females are very difficult to recognize as *Lagodias*. Hull (1962: 256) claims that both sexes of *Lagodias* can be distinguished from *Neolaparus* by not having the small, dense tuft of short hairs on the hypopleuron, but, as we have already seen, this is not found in all species of true *Neolaparus*.

The practical effect of this feathering of the legs is an interesting question. Hermann (1906:144) stresses that this is a secondary sexual character, and that the extent of the feathering varies in different species. It may be found on the tarsus only; on the tarsi and apically on the tibiae; on tarsi and tibiae, but not on femora; or on all segments of the hind and middle legs. The shape of the individual scales varies, too, from slightly flattened hairs to large scales, flattened like a paddleblade or a banana leaf. Hermann also speculates about the possible function of the feathered legs : 'Then one can hardly avoid the conclusion that this monstrous feather-apparatus must seriously handicap the insect, which is far from robust, and it can therefore be imagined that the insect possibly hunts its prey over the smooth surface of water, and that when the feathers are erected they may form a swimming paddle.'. He wisely adds that this remains mere speculation until observations on the habits of these flies can be recorded—observations that are still wanting, nearly sixty years later. On the whole Hermann's guess seems rather unlikely, the more so since both sexes seem to have the same hunting habits. Is it not more likely that the ornamentation of the legs of the males contributes to sexual display, and that the so-called genus *Lagodias* is no more than a collective name for those species of *Neolaparus* in which the males have developed such sexual ornamentation : compare, for example, the genus *Dolichopus*?

The collection from the P.N. Garamba contains only a single specimen, which cannot be referred to any known species.

Lagodias griseus sp. n.

Distinguished from most of the known species of *Lagodias* by the fact that the scales of the middle and hind legs completely cover the tarsi and the tibiae, but there are none on the femora. There is at least one other unidentified species with this type of ornamentation, but the present species is unique in having the thorax almost entirely dusted with white, and only indistinctly darker paired longitudinal stripes are visible. Wings nearly white, with pale veins.

 \Im Head. Shaped as in those species of Neolaparus that have a broad front, and have facial hairs in addition to the two strong bristles. Fronto-facial area almost as broad as one eye, scarcely narrowed at antennae. Evenly covered with white tomentum, and with white hairs. Two strong, white bristles on epistoma, and many white hairs forming a moustache, but not extending more than half-way to antennae. Proboscis and palpi black with mainly black hairs. Antennae blackish, with pale constrictions between the segments, and at base of third segment : hairs long, white ventrally, shorter and black dorsally. Occiput uniformly covered with white tomentum, and with numerous silvery white hairs, among which the pair of white postverticals are almost lost.

Thorax black, with a thick covering of white tomentum, with no pattern except for a paired longitudinal stripe which appears blackish because the tomentum is thinner there. Abundant very fine white hairs curled upwards (compare *Pegesimallus*). Strong bristles are I notopleural, I supra-alar, and I postalar. Scutellum with erect, soft, white hairs all over disc, but no strong bristles.

Abdomen. Dorsum shining black, with a purplish sheen. White tomentum covers first tergite, and surrounds bulla on second, as well as forming a pair of prominent white spots of segments 2–6. Venter shining black with yellow segmentations. Genitalia black, epandrium reddish.

Legs. Elongate and slender, femora and tibiae swelling to a knob at apex. Femora and tibiae yellow basally, otherwise legs red-brown or dark brown. Fore legs without ornamentation. Middle and hind legs each with no scales on femora, and with a broad, conspicuous, double fringe of dense black-brown scales, which continue without diminution to apex of fifth tarsal segment. Normal vestiture of short black clothing hairs and white stiff bristles present on all legs.

Wings. Hyaline, very pale yellowish and iridescent clear membrane, no microtrichiae except at extreme tip of wing.

Length of body 15 mm ; of wing 13 mm.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 1514, II/gg/8, 10.iv.1951 (IPNC).

Paratype J. ITURI : Mongabi, près Faradje, 4. iv. 1930 (Collart) (MRAC).

PEGESIMALLUS Loew

Pegesimallus Loew, 1857: 344; 1860: 69. Type-species: Pegesimallus ursinus Loew, monotypic.

As stated above, *Pegesimallus* is closely related to *Neolaparus*, and only to be distinguished by being covered with abundant, rather long, soft hairs. Hull's claim that *Pegesimallus*, like *Neolaparus*, has the small, compact hair-tuft on the hypopleuron, whereas *Lagodias* has not, is apparently not valid. The present specimen has no such tuft, although in proportions of body and head, as well as in general hairiness, its affinities clearly lie with *Pegesimallus ursinus* rather than with the stark, bare flies that are typical of *Neolaparus*.

Three species have been described in *Pegesimallus*, all from southern Africa. The present species differs from all of these in the much greater length and density of the hairs clothing the hind leg (Text-fig. 37). *Neolaparus morio* Bezzi from West Africa, and one or two undescribed allied species, ought perhaps to be transferred to *Pegesimallus*, if this genus is to be maintained at all.

Pegesimallus saegeri sp. n.

(Text-fig. 37)

A dull black, or black-brown species, with brown antennae and legs. Middle and hind legs exceptionally hairy, but not scaly as in *Lagodias*, hairs longer and denser than in any other species.

 δ Head. Fronto-facial area parallel-sided, about two-thirds as broad as one eye. Antennae at upper third. Frons black, with thin brown tomentum. A row of black hairs on each side runs from vertex and crosses diagonally to base of each antenna. Face produced at epistoma about as far as length of palpi, but with a flat profile, no facial hump (compare Lycostomus). Covered with dense brown-grey tomentum. Moustache black, composed of two strong bristles and a mass of black hairs, which does not quite extend up to antennae. Palpi cylindrical, or very slightly thickened at tip, first segment tiny and inconspicuous ; black, with very long black hairs. Proboscis black. Antennae chestnut-brown ; first two segments subequal ; third constricted basally, slightly clavate, microsegment at tip almost undetectable, with a small apical spine ; hairs and bristles black, third segment with a number of short black bristles dorsally and externally. Occiput with brown tomentum and a mass of fine black hairs, a pair of strong black postvertical bristles, and one or two others concealed among the fine hairs.

Thorax. Mesonotum strongly convex, but in a uniform curve, not projecting anteriorly; covered with thick, black-brown tomentum, with only faint traces of a pair of median longitudinal stripes, and more reddish on lateral margins. The mane of fine black hairs is less dense than in *Pegesimallus ursinus* Walker, and is confined to the dorsocentral stripes, a large area behind each humeral lobe, and broad lateral margins. Strong black bristles comprise one notopleural, one supra-alar, and one postalar, with some bristly hairs nearby. Scutellum with no bristles, and with a tuft of hairs on each side in line with supra-alars (as in many species of *Neolaparus*). Pleura black-brown, with rather long black hairs on most sclerites, but no trace of a dense little patch on hypopleuron.

Abdomen black, only faintly reddish at sides of first three tergites. Covered with black tomentum, seventh tergite with a pair of large areas of shining black. Hairs both dorsally and ventrally long, dense, and erect. Abdomen a little narrowed basally into a waist, but after fifth segment it is laterally compressed. Male genitalia of similar construction to those of *Neolaparus*, mostly shining black, but epandrium and aedeagus red.

Legs. Long and moderately slender, chestnut-brown. Hind femora a little stouter than in typical *Neolaparus*, but made to appear more so by the long, dense, black hairs, as shown in Text-fig. 37. Bristles few, and scarcely to be distinguished from the surrounding hairs. Middle legs similar, fore legs rather less hairy. Coxae with tomentum and hairs like those of pleura.

Wings. Venation normal, only anal cell closed on wing margin. Alula small, rounded. Membrane stained almost uniformly yellow-brown.

Length of body 15 mm ; of wing 12 mm.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 349, I/0/I, 28.iii.1950 (IPNC).

MICROSTYLUM Macquart

Microstylum Macquart, 1838: 26. Type-species: Dasypogon venosum Wiedemann, 1821, by designation of Back, 1909.

Mimoscolia Enderlein, 1914: 168. Type-species: Mimoscolia fafner Enderlein, 1914, by original designation.

This is another very large and difficult genus, in this respect resembling *Neolaparus*, and equally in need of a thorough revision, taking into consideration all the species throughout the Ethiopian Region. The study of *Microstylum* is further complicated

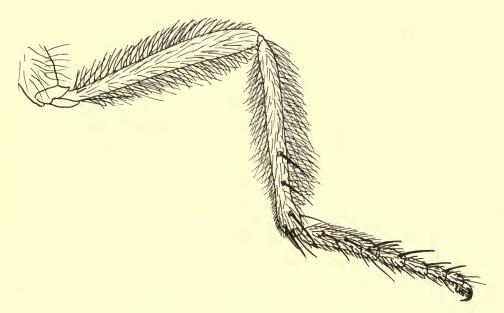


FIG. 37. Pegesimallus saegeri. Left hind leg.

by the existence of a large number of species in Madagascar, where they form a striking part of the Asilid fauna. Some species are amongst the biggest flies in the world.

The present collection from the Parc National du Garamba contains only three specimens of *Microstylum*, belonging to two species, both of which have a spur-like prolongation of the tip of the middle tibia (Text-fig. 39). This brings them into *Mimoscolia* Enderlein, which Hull (1962 : 160) regards as a full genus, though other authors have considered it to be at most a subgenus of *Microstylum*. Its status may be even less than that : it is possible that those species with some form of prolongation of the middle tibia are not even a species-group, but merely unrelated species that happen to have this detail in common. This view receives support from the fact that *M. cilipes* Macquart and *M. mydas* Engel, both from Madagascar, have a process of a sort, not on the tibia, but on the basitarsus of the middle leg, perhaps serving a similar practical purpose. Hull (1962) puts *mydas* in *Microstylum* and *cilipes* in *Mimoscolia*, though Engel (1932) puts them into the same couplet of his key.

Bezzi (1908) described two genera from the Congo Basin that are very closely allied to *Microstylum*. *Eclipsis*, monotypic for *maculiventris* Bezzi, is distinguished from *Microstylum* by having the first posterior cell of the wing closed, and the costal vein not extending much beyond R_4 ; while *Epiblepharis*, monotypic for *pedunculata* Bezzi, has the second posterior cell, of characteristic shape in *Microstylum*, pedunculate rather than sessile on the tip of the discal cell. Hull (1962 : 158, 159) rightly suspects that these may be no more than anomalous species of *Microstylum*. One badly preserved specimen from the Mayumbe, in the collection du Musée du Congo, could be *Epiblepharis pedunculata*, but if this is correctly identified it supports Hull's view, because the second posterior cell is sessile in one wing, and barely pedunculate in the other.

The following key is extremely incomplete, especially in regard to species described by the older authors from the Cape. It is given because it covers most of the species described from the Congo Basin or areas immediately adjacent, and because the existing keys deal mainly or partially with the many *Microstylum* from Madagascar.

KEY TO CENTRAL AFRICAN MICROSTYLUM

Ι	Middle tibia with spur, the tibia itself being prolonged into an acute process (Text-
	fig. 39) (Mimoscolia Enderlein)
_	Middle tibia sometimes with a comb of spines, or a slightly extended rim, but never
	with a spur (Microstylum s. str.)
2	Abdomen black, with white hind margins ; last two or three segments red (\mathcal{Q}) or
	with grey bands becoming more complete from third segment onwards (\mathcal{J})
	helenae Bezzi, 1914 : 3 (p. 266)
-	Abdomen without distinctive cross-bands, and without red tip
3	Mesotibial spur claw-like, with several strong spines. Femora black with red tips ;
	tibiae and tarsi red. Abdomen mainly red, with black base and tip, and white
	clothing hairs braunsi Bromley, 1932 : 263
-	Mesotibial spur conical, with small, globular tip. Legs black or only obscurely
	reddish. Abdomen black, with ashy grey or brown tomentum pollex sp. n. (p. 266)

4	Abdominal tergites with distinct transverse bands
_	Abdominal tergites not distinctly banded 6
5	Abdominal tergites black, with grey hind margins
	lituratum Loew, 1863 : 10 (elegans Ricardo), 1900 : 168
_	Abdominal tergites grey with narrow black segmentations . <i>hirtipes</i> Ricardo, 1925:259
6	Pteropleural bristle present
-	Pteropleural bristle absent
7	Proboscis abnormally long and slender, much longer than height of eye 8
-	Proboscis sometimes a little longer than height of head, but not conspicuously
	slender
8	Occiput with yellow hairs and bristles, only isolated black ones 9
-	Occiput with bristles predominantly black
9	Femora black at base and tip, with red ring in middle unnamed sp. (BMNH)
_	Fore and middle femora black at base, hind femora red . rufum Ricardo, 1925: 254
10	Scutellum orange
-	Scutellum black
II	Legs distinctly red in part
_	Legs black, or only indistinctly brownish <i>nigrimystaceum</i> Ricardo, 1925: 258
12	Occipital bristles partly or wholly black
_	Occipital bristles all pale
13	Wings milky white (? d only). Halteres reddish lacteipenne Wiedemann, 1821 : 371
_	Wings dark brown, not milky. Halteres black
14	Hind femora as well as hind tibiae covered with white clothing hairs
·	ricardoae sp. n. (p. 268)
_	Hind femora and most of hind tibiae with black clothing hairs ; tibiae with white
	hairs ventrally on basal half
15	Short hairs covering femora and tibiae uniformly white . validum Loew, 1857 : 347
_	Short hairs covering femora and tibiae uniformly black, except for basal half of
	anterior face of hind tibiae, where hairs are longer and white
	capensis Fabricius, 1805 : 154
16	Face not swollen except on mouth-margin, to which moustache is confined. Coxae
	with short, stiff bristles or spines, sometimes mixed with fine hairs
_	Face swollen into a conspicuous hump, with a dense moustache. Coxae clothed
	partly or entirely with long, fine hairs, sometimes mixed with a few strong bristles 26
17	Base of wing, posteriorly, milky white, constrating with blackish tip
- /	pica Macquart, 1846 : 59
_	Base of wing not conspicuously different from rest
18	Coxae hairy as well as bristly
_	Coxae bristly, with few or no fine hairs
19	Scutellar disc with only tiny spines. Legs mainly black
_	Scutellar disc with fine hairs. Legs orange
20	Proboscis distinctly longer than height of one eye. Male genitalia as in Text-fig. 38
	<i>sessile</i> Bezzi, 1908 : 376 (p. 269)
—	Proboscis shorter than height of one eye. Male genitalia as in Text-fig. 40
	attenuatum Ricardo, 1925 : 257
21	Abdomen clothed with short yellow hairs, as well as rust-brown tomentum
	venosum Wiedemann, 1821 : 215
_	Abdomen clothed with rust-brown tomentum, at least on basal segments, but
	without short hairs
22	
22	Abdomen predominantly orange
-	Abdomen dark
23	Thorax and legs chocolate-brown, contrasting with abdomen, which is orange
	except at extreme base and tip dispar Loew, 1858 : 348

-	Thorax ashy grey, heavily tomented. Legs mostly red, femora darker above. Abdomen orange, a little darker at tip, but orange at base
	unicolor Ricardo, 1925 : 256
24	Dorsum of abdomen shining black, with narrow yellow segmentations; narrow strip
	of tomentum only along each lateral margin spinipes Ricardo, 1925 : 255
	Dorsum of abdomen dull, tomented, at least on first few segments
25	Hind margins of anterior abdominal segments very clearly margined in yellow
~3	
	spurinus Walker, 1849 : 323
-	Hind margins of abdominal segments not, or very indistinctively marked
	partitum Walker ; parcum Karsch, 1887 : 373
26	Legs partly reddish or orange ; femora usually with dark stripe
	Legs entirely dark brown or black
27	Abdomen orange, only extreme base and genitalia black. Hind femora orange with
•	brown tip fenestratum Wiedemann, 1828 : 377
-	Abdomen darker. All femora with dark stripe
28	Abdomen clothed with rather long, pale hairs
	Abdomen with sparse and inconspicuous hairs
29	
29	Wings heavily stained dark brown. Mesonotum with shaggy hairs in addition to
	bristles hermanni Ricardo, 1925 : 249
-	Wings quite clear, hyaline. Mesonotum with strong bristles, and very short hairs
	only, no shaggy hairs
30	Palpi orange
_	Palpi black, though with some long, pale hairs varipennatum Bigot, 1878 : 407
31	Halteres dark, and bristles before them black
_	Halteres yellow, and bristles before them white ignobile Loew 3, 1857 : 347
	<i>rufineurum</i> Macquart 2, 1855 : 48
32	Wings extensively whitish basally, with dark tip. Abdomen black with white
54	lateral margins. Hairs of occiput, beard and coxae mainly black
	ateral margins. Trans of occiput, beard and coxae manny plack

ustulatum Engel & Cuthbertson, 1938:133

- Wings almost uniformly brown. Hairs of occiput, beard and coxae mainly white *glabrum* Ricardo, 1900 : 168

Microstylum helenae Bezzi

Microstylum helenae Bezzi, 1914: 3.

GARAMBA NATIONAL PARK : P.N.G., 331, I/0/1, 1 2, 27.iii.1950 (IPNC). KATANGA : Ngaye, 1 3, 1932 (R. O. Claquin) (MRAC).

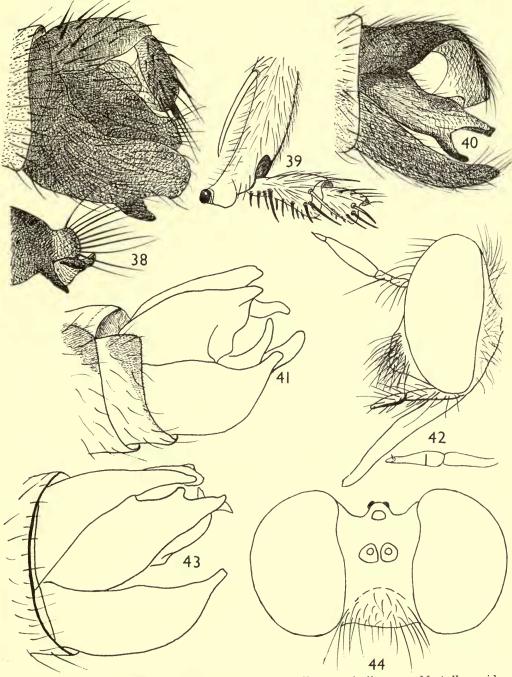
Microstylum pollex sp. n.

(Text-fig. 39)

A species of moderate length (19 mm), rather small for a *Microstylum*; black, with dark wings, and heavily tomented abdomen. Belongs to the group *Mimoscolia* Enderlein because of its spur to the middle tibiae. Nearly all the known members of this group occur in Madagascar, and apart from the distinctly banded *helenae* (see above), the only mainland species recorded is *braunsi* Engel from the Cape. This differs from *pollex* in the shape of the mid-tibial process, the colour of the legs, and the predominance of black bristles on the head.

 δ Head black, with cinereous grown tomentum and white hairs and bristles. Sides of frons with multiple row of white bristly hairs. Face in profile almost straight, and only a little

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FIGS 38-44. 38-40, Microstylum spp. 38, M. sessile, 3 genitalia; 39, M. pollex, midtibial spur; 40, M. attenuatum, 3 genitalia. 41-44, Dogonia spp. 41, D. nigra, 3 genitalia; 42, D. saegeri, head and detail of antenna; 43, D. saegeri, 3 genitalia; 44, D. saegeri, head from in front.

prominent on mouth-margin ; with brown tomentum and no hairs above moustache, which is dense, entirely white, and confined to epistoma. Palpi black with black hairs ; proboscis black with white hairs beneath base, merging with snow-white beard. Occiput covered with whitish tomentum and white hairs and bristles.

Thorax black, with ashy grey tomentum. Mesonotum more brown in middle, and traces of paired, rather broad, longitudinal stripes, and between them a groove in surface. Tiny clothing hairs black over most of area, but white round margins. Scutellum grey, bare on disc, with two strong marginal bristles, and one or more weaker ones laterad. Pleura ashy grey or blackish, with sparse hairs, mostly black, but white tufts on propleura and all coxae.

Abdomen black. Dorsum with ashy grey tomentum, which is more brown in middle. Short clothing hairs white. Venter grey with white hairs. Genitalia shining black : hairs and bristles strong and white on hypandrium, mostly black on epandrium.

Legs black, knees dull reddish, tibiae and tarsi no more than obscurely reddish. Short clothing hairs nearly all white, some black on femora ; strong bristles of tibiae and tarsi mixed white and black.

Wings uniformly dark brown. Halteres with light brown stalk and darker knob. Length of body 19 mm ; wing 14 mm.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 331, I/o/1, 27.iii.1950 (IPNC). Paratype J. 3267, Ndelele/K117, 27.iii.1952 (IPNC).

Microstylum ricardoae sp. n.

Long ago, Miss Ricardo set aside two female *Microstylum* in the BMNH collection from Kambove, in the Katanga, as 'Q of *nigribarbatum* Bigot, or sp. nov.' In the collection of the Musée du Congo Belge is a series of females of the same species, and one male, clearly conspecific, and all from the vicinity of Elisabethville. It thus becomes apparent that Miss Ricardo's species is not the female of Bigot's, but should be described as new. It is easily distinguished from *nigribarbatum* by having the hind femora and hind tibiae conspicuously clothed with white hairs.

 \bigcirc Head black, thickly covered with yellowish grey tomentum, more brownish on frons, paler on face. Frons with bristly black hairs in multiple rows along each eye-margin. Face bare except for a dense moustache of stiff bristles which may be either bright yellow or whitish, on a tubercle that occupies lower half of face. Palpi and proboscis black with black hairs. Beard silky, black ; occipital bristles and hairs nearer eye-margins, black ; inner part of occiput with silky white hairs.

Thorax dull black, with rusty brown tomentum and black hairs and bristles. An abundant covering of fine hairs as well as strong bristles at sides of mesonotum and on scutellum (2 strong, 2 sometimes weaker); no supra-alars. Pleura also with many fine black bristles, including pteropleuron which, however, has no strong bristles.

Abdomen black, dorsally and ventrally sharply divided into a dull anterior half and a shining posterior half. First four segments entirely obscured by black tomentum, but with short white clothing hairs. Segments 5–8 shining black, bare.

Legs. Black : coxae with dense, long, black hairs, no obvious strong bristles ; rest of legs with predominantly white clothing hairs, especially on hind femur, tibia and basitarsus ; elsewhere with some black hairs and bristles.

Wings uniformly rusty brown. Halteres black.

Length of body 27 mm ; of wing 21 mm.

I very similar, except that all the abdominal segments are dull, without a shining black tip.

Holotype Q. KATANGA: 150–200 m. W. of Kambove, 3500–4000 ft, 17.x-1.xi.07 (Neave Coll: BM 1907–230) (BMNH).

Paratypes. Same data as holotype, $1 \Leftrightarrow (BMNH)$; KATANGA : Elisabethville, $1 \diamondsuit, 2 \Leftrightarrow (Miss. Agric.)$; Lumbashi, $3 \Leftrightarrow, 11.x.28$ (Ch. Seydel); Elisabethville, $1 \Leftrightarrow, 12.xi.1923$ (Ch. Seydel) (MRAC).

Microstylum sessile Bezzi

Microstylum sessile Bezzi, 1908 : 376.

BAS-CONGO : Kisantu, 1 3, 1927 (R. P. Vanderyst) ; Congo da Lemba, 1 3, 1 9, 1912 (R. Mayné) ; Lemfu, 1 9, xii.1945 (Rév. P. L. de Beier) ; Boma, 1 9 (R. F. Achille) ; Banana, 1 3, xi.1934 (P. Henrard) (MRAC).

DOGONIA gen. n.

Type-species : Dogonia saegeri sp. n., by present designation.

Related to Scylaticus Loew and to Cyrtopogon africanus Ricardo, but easily distinguished from both by having the metanotal callosities hairy. Hull's key (1962:119) to his tribe Stenopogonini recognizes only seven genera of this tribe that have hairy metanotal callosities, and three of these belong to Microstylum sensu lat. In Hull's key the new genus runs down to Neodysmachus Ricardo, but is quite different in appearance from that elongate, bristly, Australian genus. In general appearance Dogonia looks like a Saropogon, but without the fore tibial spurs.

Head (Text-figs 42, 44). In profile eyes shallow, occiput conical, exposing a large surface, which has long, fine hairs but no stiff bristles. Seen from in front, face is parallel-sided, almost one quarter of head-width ; eye-margins excavate above antennae (Text-fig. 44). Ocellar tubercle large, but sunk below level of vertex. Antennae with two rather short, subequal segments, then an awl-shaped third segment, ending in a short, conical, microsegment, and a distinct apical style. Face gently convex in upper half, lower half expending smoothly into a distinct knob ; moustache confined to this knob. Palpi two-segmented, little longer than epistoma ; both segments subequal, second a little swollen basally, narrowed apically, with apical pit and style. Proboscis as long as height of eye.

Thorax not structurally remarkable.

Abdomen. Depressed cylindrical, tapering a little apically, like that of Saropogon. Bare, shining, with narrow band of tomentum on extreme lateral margins only. Male genitalia compact, with pointed lobes, rotated through about 90° anticlockwise. Female with rather long, slender acanthophorites.

Legs. No spurs on tibiae, and no other structural peculiarities. Femora and tibiae slightly swollen in one species, less so in other.

Wings. Of primitive shape : i.e. broad, with costal cell broad, and all cells open on wing-margin, including anal.

Dogonia saegeri sp. n.

(Text-figs 42-44)

A rather small species, with dark head, thorax and wings, red abdomen and legs. It differs from the following species, *D. nigra* sp. n. in coloration and in the male genitalia. (Text-figs 41, 43).

♂ Head. Black. Frons and face with dense yellowish tomentum. Frons with multiple row of bristly hairs along eye-margins, and another row leading from each antenna to ocellar tubercle : mostly pale yellowish, a few brownish or black ; ocellar tubercle with two or three pairs, some black. Face similar, but with no hairs dorsal to facial tubercle ; all hairs and bristles concentrated into a moustache, which is confined to facial tubercle, and almost entirely pale yellowish or white, with only one or two black ones. Palpi black with black hairs. Proboscis black or mahogany-red, with yellow hairs. Antennae black, with pale yellowish hairs. Occiput black with whitish tomentum and silky whitish hairs, no strong bristles.

Thorax. Ground colour black with some reddish areas, notably humeri, postalar calli and posterior parts of pleura. Covered with brown tomentum, yellow laterally. Pronotum with long, fine yellowish hairs, and no strong bristles. Mesonotum clothed uniformly and fairly densely with black hairs, which are slightly longer than first antennal segment. Scutellum with no true apical bristles ; with fine discal bristles and a submarginal row of 6–8 longer, erect. Pleura patchily black and red, covered with dense yellowish tomentum except for a large area of shining black on mesopleuron. Pleural tufts of hairs pale yellowish, except those before halteres, which may be partly black.

Abdomen bright orange : dorsum bare and shining, except for a narrow strip of whitish tomentum along each side. Face black, rather long, clothing hairs distributed over entire dorsum. Male genitalia (Text-fig. 43) red with black tips, and with long black hairs.

Legs. Coxae like pleura, with whitish hairs. Rest of legs mahogany-brown or irregularly blackish, with black bristles, and clothing hairs that are uniformly whitish. Pulvilli light brown ; claws black, reddish at base.

Wings dark brown, with purple reflections, and perhaps with clearer centres to some cells Halteres yellow.

Length of body 12 mm ; of wing 9 mm. Q closely similar.

Holotype J. GARAMBA NATIONAL PARK. P.N.G., 327, Akam, 24.iii.1950 (IPNC). Paratypes. Same data as holotype, 1 Q (IPNC) ; 305, Mt. Ndogo, 1 J, 3 Q, 15.iii.1950 ; 3262, II/fc/18, 1 Q, 31.iii.52 (IPNC).

Dogonia nigra sp. n.

(Text-fig. 41)

Distinguished from D. saegeri by its black colour, and by the different shape of the male terminalia (Text-figs 41, 43).

 $rac{S}$ Head black, with dense white tomentum, a little brownish on vertex. Bristles a little stronger, perhaps, than in *saegeri*, in some rows on frons, along eye-margins, and from antennae to ocelli ; mostly pale yellowish, but with isolated black ones. Moustache confined to facial knob, composed of white bristles with a single black one at each side. Palpi and proboscis black with yellow-brown and black hairs. First antennal segment black, second and third dark reddish ; first two segments with yellowish hairs. Occiput with white tomentum and silky white hairs.

Thorax. Pronotum speckled brown-grey, with fine, pale yellowish hairs. Mesonotum with thick tomentum, black-brown in two longitudinal stripes and paired lateral spots, yellowish in between ; entirely clothed with rather long black, bristly hairs, individually spaced, and hardly to be distinguished from the thicker bristles. Scutellum ashy dark grey, with sparse, curved clothing hairs, and with 4-6 submarginal bristles, curved upwards, and the middle pair even crossed. Pleura black, with ashy yellowish grey tomentum, leaving bare a large, shining black patch on mesopleuron. Hairs mostly pale, but with some black bristly hairs on mesopleuron.

Abdomen. Dorsum shining black-brown; entire first segment, side-margins of rest, and a narrow hind margin of seventh tergite with grey tomentum. Venter shining black-brown.

Male genitalia generally similar to those of *saegeri*, but differing in detail as shown in Text-figs 41, 43.

Legs. Coxae like pleura, with ashy yellowish tomentum and pale hairs. Rest of legs shining black-brown, with hairs and bristles partly white, partly black. Pulvilli brown, claws brown at base, black at tips.

Wings dark brown with distinctly paler centres to most cells. Halteres yellow. Length of body 10 mm ; of wing 7 mm.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., I/a/1, 13.iii.1950 (IPNC).

ANCYLORRHYNCHUS Berthold

Ancylorrhynchus Berthold in Latreille, 1827: 498. Type-species : Asilus glaucius Rossi, 1790, monotypic.

Xiphocera Macquart, 1834 : 279. Type-species : Xiphocera percheroni Macquart, 1834, original designation.

Enchocera Blanchard, 1845:463. No included species; recognizable because published as synonym of Xiphocera Macquart.

Opegiocera Rondani, 1845 : 153. [Nomen nudum].

Elasmocera Rondani, 1845 : 153. Type-species : Elasmocera cingulata Rondani, 1845, monotypic.

This distinctive genus is easily recognized by the most peculiar shape of the proboscis (Text-figs 44–48), short, pointed, backwardly curved, and when seen in profile, resembling a comma, or a parrot's beak. The genus occurs in the Palaearctic, Ethiopian and Oriental Regions, and is remarkably constant in general characters which, except for the proboscis, are close to those of *Scylaticus* (q.v.).

It seems evident that the characteristic proboscis must be related to some peculiarity of diet, but as far as I know no-one has attempted to speculate what it might feed upon. Some observations on this proboscis will be the subject of a separate small paper.

At least 22 species of Ancylorrhynchus exist in the Ethiopian Region, but only A. crux Bezzi is recorded from the Congo Basin, and that from an unknown locality. The collections from the P. N. du Garamba contain no Ancylorrhynchus; M. François collected A. crux and an undescribed species from Urundi.

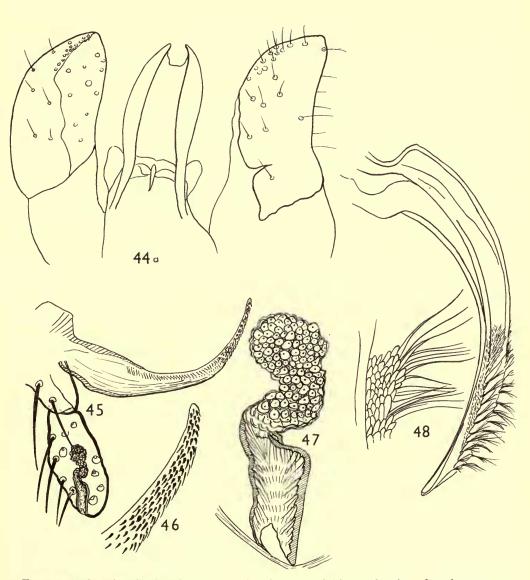
KEY TO THE SPECIES OF ANCYLORRHYNCHUS IN THE ETHIOPIAN REGION

Ι	Fourth posterior cell closed, with or without stalk
_	Fourth posterior cell open, even if narrowed
2	Wings entirely dark funebris Bromley, 1936 : 135
	Wings pale in part
3	Legs entirely black susurrus Karsch, 1879 : 380
	Legs entirely reddish
4	Mesonotum red with a black cross. Ground colour of face yellow
	<i>cruciger</i> Loew, 1857 : 348
-	Mesonotum almost entirely black, with red only on humeri, postalar calli and hind
	margin of scutellum
5	Wings entirely pale 6
	Wings at least partly dark, or uniformly but irregularly smoky
6	Mesonotum red, with a thin black median line ; scutellum red with median black
	spot. Halteres black pretoriensis Bromley, 1836 : 135

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-	Mesonotum black, with red colour on humeri, and posteriorly ; scutellum red with
	black base. Halteres tawny yellow
7	Legs entirely black. Wings indistinctly bicoloured 8
	Legs not entirely black. Wings distinctly bicoloured, or entirely dark, or irregularly
0	smoky without definite paler areas
8	Moustache pale. Scutellum black nomada Wiedemann, 1828 : 297
-	Moustache black. Scutellum black, reddish at sides . unifasciatus Loew, 1857 : 349
9	Wings entirely dark, or uniformly smoky grey
-	Wings bicoloured
10	Abdomen black with sharply defined yellow (not red) hind margins, sometimes
	broken into a pair of spots ; second segment with a broad band of white tomen-
	tum, interrupted in middle
_	Abdomen without sharply defined bone-yellow bands
II	Moustache pale
	Moustache black
12	Antennae and humeri reddish. Abdomen shining black dorsally, reddish ventrally
	humeralis Wiedemann, 1821 : 235
-	Antennae and humeri black. Abdomen bright red, except for black first segment
	(an unnamed sp. from S. Africa)
13	Legs bicoloured
-	Legs entirely reddish
14	Moustache entirely black
-	Moustache entirely or predominantly pale
15	Scutellum black
	Scutellum partly red. Thorax with brown tomentum, unusual in this genus.
-6	Hind femora red with longitudinal black stripe <i>striatus</i> sp. n. (p. 274)
16	Scutellum entirely reddish or tawny, Wings light brown, with costal border yellow. Second abdominal segment with a pair of large grey patches
17	Lateral borders of mesonotum black from behind humeri to transverse suture.
17	Abdomen black, posterior segments with orange hind margins, expanded laterally.
	Palpi with black or brown hairs braunsi Bromley, 1936 : 136
_	Lateral borders of mesonotum broadly red. Abdominal segments 1-4 black, with
	narrow red hind margin ; fifth segment much brighter red. Palpi with red hairs
	(tricolor Loew = either braunsi or reynaudii) reynaudii Macquart, 1838 : 48
18	Yellow base and brown tip of wings sharply divided
	Yellow and brown indistinctly merging, or dark area of indefinite extent, even if
	contrasting in colour with yellow base
19	Abdomen entirely black, segments 2-5 grey dusted. Large, robust species (25 mm)
-	Pteropleuron red. Dark tip of wing including half of total area, and entire discal
	cell
-	cell
	markings. Smaller (15 mm)
20	First abdominal segment entirely black. Pteropleuron black
	apicalis Curran, 1934 : 7 Ino difference in descriptions
	apicalis Curran, 1934 : 7 splendens Bromley, 1936 : 137 First abdominal segment partly red Pteropleuron reddish
-	First abdominal segment partly red. Pteropleuron reddish
	Two species recognized by Hermann but apparently undescribed
21	Mesonotum mostly black, red colour confined to humeri, postalar calli, and apex of
	scutellum. Abdomen black, all segments broadly margined with reddish colour
	fulvicollis Bigot, 1878 : 429
-	Mesonotum mainly red, with a black cross
22	Hypopleuron distinctly red insignis Bromley, 1936: 137
-	Hypopleuron black, or only indistinctly reddish

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FIGS 44a-48. Ancylorrhynchus sp., proboscis. 44a, labium, showing dorsal groove; 45, maxilla, with palp; 46, tip of maxilla; 47, glandular organ of palp; 48, hypopharynx, with detail.

Ancylorrhynchus crux Bezzi

Ancylorrhynchus crux Bezzi, 1908: 377.

URUNDI : Terr. de Bururi, I \mathcal{Q} , 19.v.1952, colline Rumonge, loc. Imbo., alt. 780 m ; Rumonga, sable et brousailles près du rive du Lac Tanganika, alt. 790 m, I \mathcal{Q} , 19–20.vi.1948 (FJF).

Ancylorrhynchus striatus sp. n.

One of the rather few species of *Ancylorrhynchus* to have bicoloured legs, this species is distinct from all others in having a narrow black longitudinal stripe on all the femora, which are otherwise red.

 \bigcirc Head in ground colour black, covered with dense yellow tomentum, leaving only a small bare spot beneath the antennae, and one on each side of mouth-margin. Hairs of frons and face pale yellow, including a shallow moustache on mouth-margin, linked with tracts of longer hairs on each side of face. Hairs and bristles of occiput and beard, in contrast, deep red, bristles strong and dense. Antennae red, third segment with blackish stripes, first two segments with yellow hairs and bristles. Palpi reddish with black bristles. Proboscis red.

Thorax. Pronotum red anteriorly, black posteriorly and laterally. Mesonotum red, with usual cruciform black markings, its transepts triangular, and a distinct brown median line; behind each humerus a barrow black crescent; scutellum red with a transverse black basal band; bristles yellow, 4 notopleurals, 3 postalars. Entire dorsum covered with a white, powdery dusting, which greatly obscures the pattern. Pleura entirely black with brown tomentum, except for a reddish area beneath hind spiracles and halteres.

Abdomen. First six segments black, each becoming more reddish posteriorly, and with a narrow red hind margin. Thick brown or yellowish brown tomentum, and numerous pale yellow clothing hairs, but no strong bristles. Last two segments and terminalia orange, with orange spines.

Legs. Coxae like pleura. Legs otherwise red, femora each with a narrow black stripe along dorsal surface. Bristles yellow, becoming black on fore tibiae.

Wing. All cells open on margin, including anal (narrowly). From anterior cross-vein to wing-tip is brown, and a further brown band runs across base of discal cell. Halteres bright yellow.

Length of body 16 mm ; of wing 12 mm.

Holotype Q. URUNDI : Nyamibu, Lac Tanganika, 24.vi.1949 (FJF).

Paratype Q. Same data as holotype (FJF).

SCYLATICUS Loew

Scylaticus Loew, 1858: 346, 349. Type-species: Scylaticus zonatus Loew, by designation of Engel, 1929: 369.

A genus of distinctive flies, bristly, with rounded head and inflated occiput. Obviously closely related to *Ancylorrhynchus*, but having a straight, acute proboscis of normal type instead of the characteristic beak-like proboscis of *Ancylorrhynchus*. The third antennal segment, too, is different.

Scylaticus is a genus of rather arid places, and in the Ethiopian Region the species are known from South Africa as far north as Nyasaland. Other species occur in

the Sahara and the eastern Mediterranean, as well as in India and in S. America. It seems likely that the two populations in North and South Africa may be linked through Kenya and Tanzania.

There are no specimens of *Scylaticus* in the collections from the P. N. du Garamba, and only three specimens, all different, from the Katanga. These will be left for future consideration, along with the S. African species. Engel (1932:276) published a key to those species known to him.

GONIOSCELIS Schiner

Gonioscelis Schiner, 1866: 670. Type-species: Dasypogon hispidus Wiedemann, 1819, by original designation.

A very distinctive genus, generally resembling a small *Stenopogon* but recognized at once, in both sexes, by the characteristic development of the fore femora (Text-fig. 49). This is obviously a highly efficient apparatus for seizing and holding prey. The proboscis, though short, is stiff, acutely pointed, and slightly curved. The eyes are close together, as in *Stenopogon*, and there is the same dusty, bristly appearance and sandy colouring, appropriate to hunting in scrubby, arid areas.

There are no *Gonioscelis* in the collection from the P. N. du Garamba, but species occur in Urundi and in the Congo Basin.

Gonioscelis maculipennis Engel

Gonioscelis maculipennis Engel, 1925: 169.

TANGANIKA : Albertville, I \mathcal{Q} , I-20.ii.1919 (*R. Mayné*) (MRAC). Provisionally assigned to this species, as its sex and condition make it impossible to identify with more certainty.

Gonioscelis occipitalis sp. n.

(Text-fig. 49)

A red-legged species, with dull ashy grey-brown abdomen, distinguished from related species by the white-tomented occiput, with black triangles and entirely black, proclinate bristles.

 \bigcirc Head. Even more strongly compressed than is usual in this genus, frons and upper part of face forming a parallel-sided strip scarcely broader than the two antennae together. Frons black, with bronze tomentum, and with proclinate hairs on each side, just above antennae. Upper part of face, above facial hump, similar, with a band of strong black bristles medially; facial hump only moderately prominent, covered with white tomentum except at extreme lower angles, where there is a bare, black spot on each side. Moustache mainly of strong black bristles, with white ones on mouth-margin. Occiput covered with white tomentum, except for a pair of large, shining black, bare triangles just behind vertex. From these triangles arise very strong, proclinate, black bristles, with finer black bristles surrounding them, and a single row of straight black bristles parallel to eye-margin, but some distance behind it. Beard yellowish white ; palpi and proboscis black with black and white hairs. Antennae with first two segments blackish with black hairs (rest missing).

Thorax. Mesonotum ashy, more black-bronze anteriorly, more whitish posteriorly. Clothed with very short black bristles and also with 3 pairs of dorsocentrals, 3-4 notopleurals, 3 supraalars, all black ; 2-3 strong yellow postalars. Marginal scutellars black, one strong pair and one weaker. Pleura with no strong hairs or bristles.

Abdomen dully shining black-brown through thin ashy grey tomentum, and covered with short, stiff black bristles, with longer tufts at sides of first and second segments. Segments 7, 8 shining reddish brown and forming part of ovipositor. Venter similar.

Legs. Coxae like pleura. Fore and middle coxae with strong white bristles, third with a few black bristles. Fore femora black basally on anterior surface; mid femora a little so; legs otherwise reddish yellow, even to tips of tarsi. Short clothing hairs white, bristles black.

Wings uniformly smoky brown. Halteres reddish.

Length of body 13 mm ; of wing 10 mm.

Holotype Q. LULUA : Sandoa à Kapanga, ix.1928 (Dr. Walker) (MRAC).

Gonioscelis tomentosus sp. n.

A black, dark-winged species, in general appearance resembling only G. nigripennis Ricardo, but distinguished from that species by having the thorax not shining black, but covered with tomentum, that of the pleura especially being dull bronze. From G. lacertosus Engel, which also has dark wings, G. tomentosus is distinguished by the leg-colour, the legs of lacertosus being almost entirely orange.

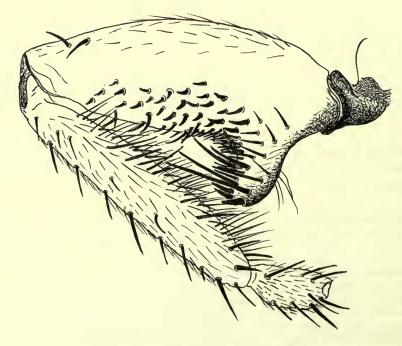


FIG. 49. Gonioscelis occipitalis, fore femur.

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 \bigcirc *Head* black, except for conspicuously orange third segment of antenna. Frons and face very narrow, touching bases of antennae and ocellar tubercle, covered with golden tomentum, a little bare in centre of face and on buccae, with black hairs and bristles. No hairs or bristles on frons except on ocellar tubercle. Moustache entirely black, or with one or two white bristles ventrally, mounted on a slight facial tubercle, which merges gradually with upper face. Vertex narrow, rather flat, with no bare areas, and with black hairs, third segment and part of second red.

Thorax. Ground colour black, with orange humeri and dull reddish lateral margins, including postalar calli. A dull bronze tomentum exposes a darker pattern of a divided broad median stripe and lateral spots. Mesonotum clothed with short, spiky black bristles; longer bristles may be black or dull red, latter especially laterally; three pairs of strong postsutural dorso-centrals with one or two feeble pairs anteriorly. Scutellum black, with one pair of black marginal bristles. Pleura uniformly covered with bronze tomentum, without dark areas or other pattern.

Abdomen red-black, or mahogany coloured, with base of first segment and hind margins of others a lighter red ; dully shining through thin grey tomentum which becomes visible in certain directions of the light. Clothing hairs short, erect, black, with longer tufts at sides of first and second tergites.

Legs. Fore coxae with bare, shining black streak posteriorly, and a smaller spot anterobasally. Trochanters black, legs otherwise red, with fore and middle femora extensively black anteriorly on basal half; hind femora and posterior face of middle femora obscurely darker. Wings dark brown, with clearer centres in some cells. Halteres red.

Length of body 15 mm ; of wing 10 mm.

Holotype Q. LULUA : Kapanga, viii.1932 (F. G. Overlaet) (MRAC). Paratype Q. KATANGA : Fokele, 29.xi.1911 (Dr. Bequaert) (MRAC).

Gonioscelis congoensis sp. n.

(Text-figs 50a, 50b)

This species is described, in spite of the poor condition of the available material, because it is confusingly close to *genitalis* Ricardo, from South Africa. The two species may be distinguished by the male genitalia (Text-figs 50a, 50b).

 $rac{S}$ Head. Frons and face very narrow, hardly diverging towards mouth-margin. Ground colour black, covered with tawny tomentum and tawny hairs and bristles. Ocellar tubercle with a few black bristles. Moustache entirely tawny. Antennae black basally, with tawny hairs, becoming more reddish apically (third segment broken off in 2 eals available). Proboscis and palpi black with yellowish hairs. Occipital hairs and bristles entirely tawny.

Thorax mostly red, with broad, divided median black stripe and large lateral black spots; scutellum black. This pattern mostly obscured by brassy yellow tomentum. Bristles long, tawny, dorsocentrals postsutural only. Pleura uniformly covered with dense, brown tomentum.

Abdomen dully shining through ashy tomentum, which leaves segmentations yellow : seventh and eighth segment more shining. Clothing hairs short, tawny ; venter similar. Male genitalia as in Text-fig. 50a.

Legs predominantly red, but with femora black (specimens badly preserved). Fore and middle femora not marked with a strong black stripe as in *genitalis* Ricardo.

Wings almost uniformly brown, a little darker in marginal cell.

Length of body 15 mm ; of wing 10 mm.

 \Im Similar. Third antennal segment reddish. Seventh and eighth segments incorporated in ovipositor.

Holotype J. LULUA : Luluaborg, 21.V.1939 (J. J. Deheyn) (MRAC).

Paratypes. LULUA : Luluaborg, I 3, 18.v.1912 (P. Callewaert) ; Wombali, I \mathcal{Q} , vi.1913 (P. Vanderijst) ; Manyema, I \mathcal{Q} (R. Mayné) ; Bolobo, Makamandulu, I \mathcal{Q} , 1938 (Dr. Schouteden) (MRAC).

Gonioscelis francoisi sp. n.

(Text-fig. 51)

Distinguished from the other species of *Gonioscelis* in the Congo Basin by the fact that the dorsocentral bristles extend forwards in front of the transverse suture of the thorax ; hairs of the head predominantly black, and hind femora slender and black.

 δ Head. Narrow, frons about twice as broad as ocellar tubercle, covered with yellowish tomentum and with a row of black hairs along each eye-margin. Face diverging little above

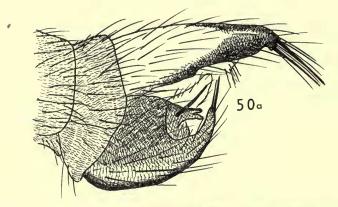


FIG. 50a. Gonioscelis congoensis, & genitalia.

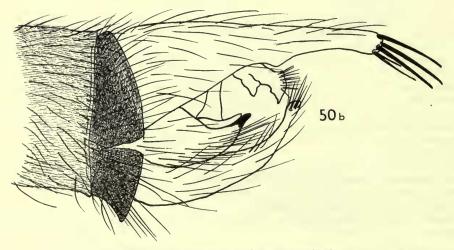


FIG. 50b. Gonioscelis genitalis, & genitalia.

facial knob, and then sharply down to mouth-margin; facial knob slight, with moustache usually entirely black, sometimes pale; above it, reaching nearly up to bases of antennae, are other black hairs; lower ones shorter and more bristly, a tuft beneath antennae longer, prominent, and rather silky. Occiput with yellow tomentum and two large, diamond-shaped, shining black patches (cf. *occipitalis* sp. n.); occipital bristles mixed black and yellow, a multi-serial row some distance behind eye-margin. Antennae, proboscis and palpi black, with black hairs.

Thorax black with brassy yellow tomentum. Mesonotum without pattern, though with faint indications of a median stripe. Covered with very short black bristles; 5 pairs of long, strong black supra-alars; a notopleural supra-alar row of 4-5 black; 2 postalars, yellow or black. Scutellum with one pair of black bristles slightly before posterior margin. Pleura with brassy tomentum and no long hairs.

Abdomen. Dorsum black, with yellowish grey tomentum, posterior margins of segments darker, at least medially; seventh and eighth tergites more shining blackish. Clothing hairs short, yellow; longer tufts on first and second segments black. Venter shining black, with short yellow hairs. Male genitalia red, short, as in Text-fig. 51.

Legs. Fore and middle coxae with black hairs, hind coxae with yellow hairs. Femora mainly black; fore and middle femora red posteriorly and apically, hind femora long, slender, and entirely black. Tibiae and tarsi reddish, obscurely darkened, especially on posterior faces of tibiae. Clothing hairs yellow, bristles mostly black.

Wings. Dark brown with paler centres to many cells, especially to first basal cell.

Length of body 13 mm ; of wing 9 mm.

Q. Quite similar. Ovipositor includes tergites 8, 7 and most of 6.

Holotype J. URUNDI: Kisenyi, Busoni, 1800 m, 17.xii.1950 (F. J. François) (FJF).

Paratypes. Same data as holotype, I

A 3 paratype from URUNDI, Kitega, 1700 m, 21.X.1950 (F. J. François) has the fore and middle femora less heavily darkened. A Q paratype from Kitega, 1720 m, 1.Xii.1950 has the colouring of the preceding female, but with the moustache entirely white. There is evidently some degree of variation in this species.

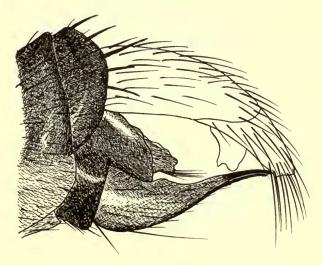


FIG. 51. Gonioscelis francoisi, 3 genitalia.

RHABDOGASTER Loew

Rhabdogaster Loew, 1858 : 346, 351 ; Engel, 1929 : 168. Type-species : Rhabdogaster nudus Loew, monotypic.

Described both by Loew and by Engel as resembling a *Leptogaster*, but with complete pulvilli, and with acanthophorites in the female. The male genitalia are of a rather distinctive structure, with the epandrium divided into two large lobes, and with long, curved aedeagus (Text-fig. 52). Posterior to the hind coxae, beneath the base of the abdomen, is a heavily sclerotized arch instead of the usual membranous area : according to Hull's key (1962 : 119) this character distinguishes *Rhabdogaster* from related genera.

Two of the known species of *Rhabdogaster—nudus* Loew (1858) and *maculipennis* Engel (1929)—are both small or very small (7–8 mm), delicate flies, pale yellow in colour. The new species is larger than this (10 mm), and shining black, and so is close to *nitidus* Hull (1967), from S.W. Africa, which I have not seen.

Rhabdogaster major sp. n.

(Text-fig. 52)

 $^{\circ}$ Head in front view relatively broad, but not as broad as that of Xenomyza : breadth of frons : height of frons + face = 2 : I instead of 2.5 : I. Frons and face parallel-sided, more than half as broad as an eye ; shining black in ground colour, with sparse yellow tomentum. Face has no perceptible facial knob, but a moustache of sparse white hairs occupies basal half, and is surmounted by very short, scaly yellow hairs which reach up to antennae. Hairs and weak bristles on ocellar tubercle, vertex and occiput, all white or pale yellowish. Proboscis

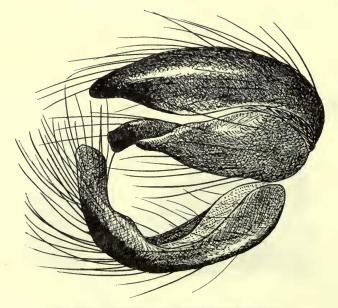


FIG. 52. Rhabdogaster major, 3 genitalia.

and palpi black, with whitish hairs. Antennae black, with yellow hairs, third segment slender, pointed, as long as first two together ; style almost two-thirds as long as third segment.

Thorax. Mesonotum shining black, with only small areas of yellow tomentum, of which humeral triangles are the most conspicuous ; a narrow line of tomentum in suture at base of scutellum, and at extreme lateral margins of mesonotum. Extremely short, fine yellow hairs along lines of acrostichals and dorsocentrals, and on transverse suture. Two strong notopleurals, a cluster of four or five prescutellars, but no marginal scutellars. Scutellum shining black, rather convex, with a deep submarginal groove. Pleura also shining black with very thin white tomentum : tufts of white hairs on pronotum, propleuron, upper sternopleuron and before halteres.

Abdomen elongate, cylindrical, much longer than wings, which reach only to tip of fifth segment. First five segments bare, shining black ; sixth-eighth segments with dark brown tomentum ; all tergites with short black hairs. Venter with pale yellowish tomentum and whitish hairs. Genitalia as in Text-fig. 52, prominent.

Legs predominantly black, but knees and hind tibiae and metatarsi red or reddish, especially posteriorly. Hairs and bristles of legs almost entirely *white*.

Wings. Venation simple : anal cell closed, with short stalk, but all other cells open on wingmargin ; discal cell long and narrow, its origin almost as far back as fork of R_1/R_{2+3} . Veins brown or black. Membrane clear and apparently colourless, but with microtrichiae scattered over most of area except basally. Halteres orange.

Length of body 10 mm ; of wing 7 mm.

² Similar. Ovipositor simple, with acanthophorites and a small ventral keel.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 3480, Inimvua, 16.v.1952 (IPNC).

Paratype Q. Same data as holotype.

Tribe STICHOPOGONINI

This is a small tribe of interesting Asilidae, set apart from Saropogonini by having the prosternum complete, or nearly so, and firmly bridged to the propleuron. The female terminalia are characteristic (Text-figs 54, 55), with the eighth sternite produced like the hull of a boat, and often with a distinct keel, surmounted by a crown of spines, and sometimes terminated with a dense brush of silky hairs. Though some Saropogonini have a similar structure it is not so fully developed.

The most obvious characteristic of this tribe is the saddle-shaped excavation of the vertex, as a result of which the eyes are much more widely separated at the vertex than opposite the antennae (Text-figs 53, 56, 57, 60).

Hull (1962: 104) recognizes thirteen genera in this tribe, including *Eremodromus* Zimin and *Turkmenomyia* Paramonov, which were unknown to Hull, and omitted from his key. *Lasiopogon*, though apparently correctly assigned to this tribe, stands apart from the rest, and is a genus of Holarctic robber-flies that hunt in grassy areas from shrubs and low herbage. The rest of the tribe are essentially xerophilous, and are to be found sitting in full sunlight on sand, or on the stones of a dry stream-bed. For concealment they rely on their cryptic grey colouration and on the dazzling effect of the light. They sit motionless until potential prey flies overhead, and it may be that the characteristic broadening of the frons and separation of the eyes at the vertex is a device to improve stereoscopic vision directly overhead.

Apart from *Lasiopogon*, the other genera are basically very much alike, and should perhaps be reduced to subgenera of *Stichopogon*. The differences are small details of antennal structure, of the arrangement of the moustache, of the wing-venation, and of the presence or absence of pulvilli. The last character is somewhat elusive outside the tribe Leptogasterinae, occurring sporadically, and perhaps not even of generic significance ; for instance in the genus *Glyphotriclis*.

Though especially characteristic of arid areas, *Stichopogon* occurs throughout all the tropical and warm-temperate countries of the world, and is often found in stream-beds in well-watered country. In such areas, however, the number of species appears to be small, and individual species have a wide, if scattered, distribution.

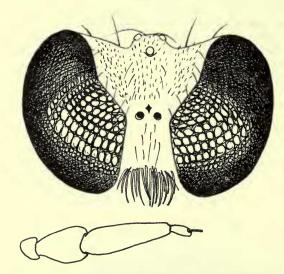


FIG. 53. Stichopogon caffer, head and antenna.

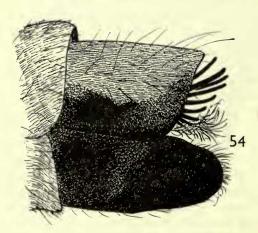


FIG. 54. Stichopogon caffer, Q terminalia.

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Hull (1962) records seven species from the Ethiopian Region. Of these Dasypogon dilutus Walker was removed to Stenopogon by Miss Ricardo; S. grossus from the Durban Bluffs is clearly a Clinopogon, and is possibly a synonym of C. nicobarensis Schiner, widely distributed round the shores and islands of the Indian Ocean. The remaining five species may be separated as follows:

KEY TO THE SPECIES OF STICHOPOGON OF THE ETHIOPIAN REGION

N.B.—Some of the species of the arid region of Egypt and the Near East may extend into eastern Africa.

I	Frons and face very much constricted at antennae (Text-fig. 60). Legs entirely black										
	unicolor Ricardo, 1925 : 276										
	Frons and face less heavily constricted. Legs not entirely black										
2	Femora mainly or entirely red										
-	Femora mainly or entirely blackish										
3	Wings with a diffuse brown patch stretching from R_1 to R_4										
	<i>maculipennis</i> E. & C., 1939 : 188										
-	- Wings clear										
4	C 1 1 C 1 1										
·	Males with small, but very distinct spot on fork of R_{4+5} . Females with trace of										
	dark spot, and with eighth abdominal tergite almost entirely tomented ; ventrally										
	with conspicuous tuft of silky golden hairs (Text-fig. 55)										
	punctum Loew, 1851 : 15 (p. 284)										
	Grey bands of abdomen incomplete, but equal, without any segments especially										
	prominent. No dark spot on wings. Females with eighth tergite mostly bare and										
	shining, tomented only dorsally, and without prominent golden tuft (Text-fig. 54)										
	<i>caffer</i> Hermann, 1907 : 3 (p. 283)										
	The collection from the P.N. du Caramba contains only one species of Stickabagan										

The collection from the P.N. du Garamba contains only one species of *Stichopogon*, the widespread *S. punctum* Loew, though *S. caffer* Loew and *S. hermanni* Bezzi also occur in the Congo Basin.

Stichopogon caffer Hermann

Stichopogon caffer Hermann, 1907 : 3.

LOMAMI : Luputa, I J, 2 Q, xii.1934-i.1935 (Dr. Bouvier) ; Kanjama, I J, 1931

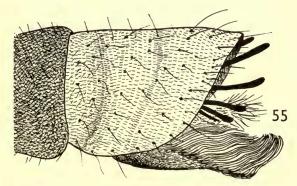


FIG. 55. Stichopogon punctum, ♀ terminalia.

(R. Massart); Coquilhatville, Basankusu, $I \ Q$, 1949 (ten Bunderen); UBANGI: Nouvelle, Anvers, $I \ Z$, 9.xii.1952 (P. Basilewsky); STANLEYVILLE: $I \ Q$, 4.iii.1928 (A. Collart) (MRAC). URUNDI: Minago, $I \ Z$, 5.iv.1949, 730 m (FJF).

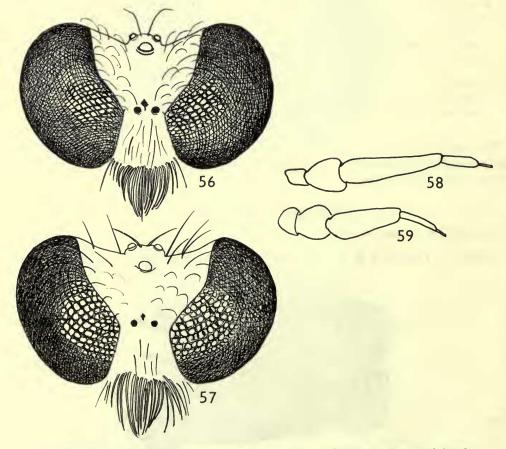
Stichopogon punctum Loew

(Text-figs 56, 58)

Stichopogon punctum Loew, 1851 : 15. Stichopogon punctatus Loew, 1852 : 658.

GARAMBA NATIONAL PARK : 1461, II/fc/18, 1 Q, 28.iii.1951 ; 2910, II/fd/17, 1 Å, 14.xii.1951 ; 3177, II/gb/14, 2 Q, 8.iii.1952 ; 5262, II/fe/18, 1 Q, 31.iii.1952 ; 214, I/b/2, 1 Å, 22.ii.1950 ; 1223, II/ed/17, 1 Q, 6.ii.1951 ; 1167, II/fc/5, 1 Q, 31.i.1951 ; 94, I/b/3, 1 Q, II.i.1950; 199, I/a/3, 1 Å, 7.iii.1950 (IPNC). The last two females are distinctly larger than the others, but seem otherwise conspecific.

BAS-CONGO : Boma, 2 9, v.1913 (Dr. Bequaert) ; KWANGO : Popkabaka, 2 9,



FIGS 56-59. 56, Stichopogon punctum, head. 57. Stichopogon hermanni, head. 58, Stichopogon punctum, antenna. 59. Stichopogon hermanni, antenna.

iii.1952 (L. Pierquin) ; Mayidi, 1 \mathcal{Q} , 1942 (P. van Eyen) ; TANGANIKA : Mpala, 780 m, 2 \mathcal{Q} , vii/viii. 1953 (H. Bomans) ; Dt. de BONGALA : 1 \mathcal{Q} , viii.1920 (L. Burgeon) ; Stanleyville, 1 \mathcal{Q} , 9.iii.1927 (A. Collart) (MRAC).

URUNDI : Nyanza Lac, alt. 780 m, 3 3, 5 φ , 20.ix.1948 ; Usumbura, Lac, 3 φ 19.v.1955 (FJF).

Stichopogon hermanni Bezzi

(Text-figs 57, 59)

Stichopogon hermanni Bezzi, 1910 : 145.

Coquilhatville : Eala, 1 9, iii.1932 (H. J. Brédo). (MRAC)

Tribe XENOMYZINI

These are the 'goggle-eyed' flies referred to in the Introduction, distinguished to the naked eye by the reduction of frons and face, and antero-posteral flattening of the head into a disc in which the eyes are large and prominent.

These features differ only in degree from conditions in many other genera of Asilidae, and are sometimes difficult to assess : it is generally easy to say when flies are 'goggle-eyed', but not so easy to be certain when they are not. In the Ethiopian Region the prosternum is fully bridged to the pronotum in Xenomyzini, but this is not necessarily true in other Regions.

My key to genera (Oldroyd, 1963 : 7) recognized eight genera in this tribe, but a later revision of the genus *Rhipidocephala* (Oldroyd, 1966) rejected *Holcocephala* as not African, and merged *Margaritola* and *Paroxynoton* into *Rhipidocephala*. This

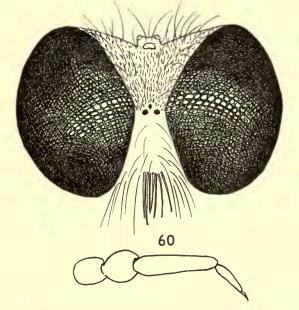


FIG. 60. Stichopogon unicolor, head and antenna.

reduced the Xenomyzini of the Ethiopian Region to four genera : Oxynoton Janssens ; Rhipidocephala Hermann ; Xenomyza Wiedemann and Oligopogon Loew.

KEY TO GENERA OF AFRICAN XENOMYZINI

- I Third antennal segment small, with long arista. Anal cell closed and stalked ; fifth posterior cell making contact with discal cell . XENOMYZA Wiedemann (p. 287)
- Third antennal segment elongate, with apical style. Anal cell open, or barely closed; fifth posterior cell not making contact with discal cell. (Text-fig. 69).
- 2 Mesonotum with an exaggerated hump, strongly projecting forwards. Ovipositor with spines (acanthophorites) OXYNOTON Janssens (p. 286)
- 3 Second segment of antennal style with long hairs. Abdomen elongate-cylindrical. Ovipositor with spines (acanthophorites) OLIGOPOGON Loew (p. 294)
- Both segments of antennal style with short hairs. Abdomen at most twice as long as broad. Ovipositor without acanthophorites

RHIPIDOCEPHALA Hermann (p. 286)

OXYNOTON Janssens

Oxynoton Janssens, 1951: 1. Type-species: O. francoisi Janssens, monotypic.

Remarkable for the excessive development of the mesonotum into a strong hump. The female, like the female of *Oligopogon*, has a crown of spines on the ovipositor. Only one species of *Oxynoton* is so far known, originally described from Urundi.

Oxynoton francoisi Janssens

Oxynoton francoisi Janssens, 1951: 1.

TANGANIKA : N.E. Kondoa, 1 \mathcal{Q} , May 55 (J.F. Lamerton) ; Gonja, May 58, 2 \mathcal{J} , (J. D. Phipps) (BMNH).

RHIPIDOCEPHALA Hermann

Rhipidocephala Hermann, 1926: 174; Oldroyd, 1966: 149. Type-species: Rhipidocephala angustior Oldroyd, 1966, by original designation as analis Macquart sensu Hermann, nec Macquart.

Paroxynoton Janssens, 1953:11. Type-species : P. tigrinum Janssens, by original designation.

Margaritola Hull, 1958: 255. Type-species: Margaritola mirabilis Hull, 1958, by original designation.

A revision of this genus was published by Oldroyd (1966), and the following records relating to the Parc National du Garamba are extracted from it :

Rhipidocephala tigrina (Janssens)

Paroxynoton tigrinum Janssens, 1953: 12.

URUNDI : Gihanga & Bubanza (IRSNR).

Rhipidocephala morio Hermann

Rhipidocephala morio Hermann, 1926 : 180.

KATANGA : Mulungivishi, 1 9, i.1931 (G. F. de Witte) (MRAC).

Rhipidocephala congoiensis Oldroyd

Rhipidocephala congoiensis Oldroyd, 1966 : 164.

KASAI: 43, 39, 1928 (D. Walker); Dolo, 43, 19, xi.1912 (F. Chaltin); LOMAMI: Katompe, 2 \mathcal{Q} , 12.xiii.1923 (*M. Bequaert*) (MRAC).

Rhipidocephala scutata Oldroyd

Rhipidocephala scutata Oldroyd, 1966 : 166.

GARAMBA NATIONAL PARK : P.N.G., 469, I/a/1, 1 9, I.V.1950 (G. Demoulin) ; 1588, II/hc/4, 10 3, 4 9, 20.iv.1961 (J. Verschuren); 1824, II/fd/27, 1 3, 28.v.1951; 1887, II/gd/7, 1 9, 8.vi.1951; 3323, Pidigala, 2 3, 23.iv.1952; 3447, II/gd/4, 2 3, 1 9, 8.v.1952 ; 3678, Ndelele, 1 3, 2 9, 4.18.vi.1952 (IPNC).

KIVU: Uviva, 3 &, 4 Q, xi.1922 (Ch. Seydel); 16-23.iii.1953 (P. Basilewsky) (MRAC).

XENOMYZA Wiedemann

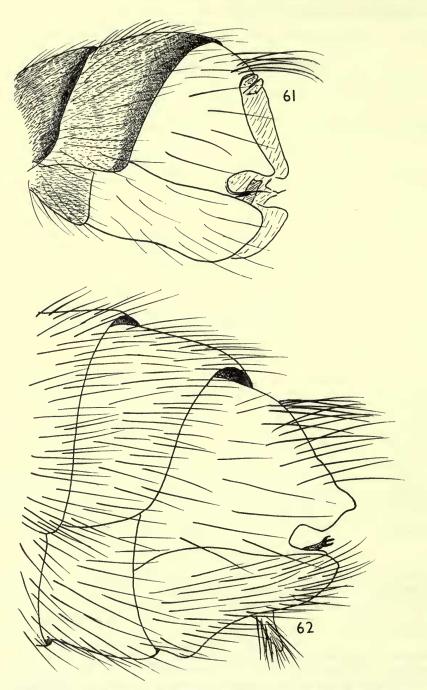
Xenomyza Wiedemann, 1817: 60. Type-species: Damalis planiceps Fabricius, 1805, by designation of Coquillet, 1910. Damalis auctt. nec Fabricius, 1805 : 147.

The name of this genus is usually Damalis, but the original concept of Damalis confused Asilids and Empids, and Westwood, 1835 designated as type of Damalis the first species, D. curvipes Fabr., which is an Empid. I therefore follow the example of Carrera, and use Wiedemann's name Xenomyza for this genus in Asilidae.

The species that have been described from Africa are nearly all from Southern Africa, and none of them appear to conform with any of the four species recognized below, which are all therefore described as new. The four are easily separated on genital characters as well as by colour differences, though, as I explain under the specific description, it is probable that specimens I have included in taciturna sp. n. should be separated into more than one species.

KEY TO SPECIES OF XENOMYZA IN THE CONGO BASIN

I	Hind femora noticeably swollen, and with strong bristles ventrally (Text-figs 65, 66)
-	Hind femora not noticeably swollen, ventral bristles not noticeably strong. Wings
	typically colourless, but in some included specimens they have a yellow tinge
	<i>taciturna</i> sp. n. (p. 289)
2	Hind femora slender in basal half, expanding considerably in distal half (Text-fig. 65)
	<i>amphora</i> sp. n. (p. 290)
-	Hind femora expanded over entire length (Text-fig. 66)
3	Mesonotum with three shining black stripes, broad, and touching each other ;
	scutellum covered with white tomentum poseidon sp. n. (p. 291)
-	Mesonotum tomented, but scutellum bare and shining scutellata sp. n. (p. 292)



FIGS 61, 62. Xenomyza taciturna, 3 genitalia. two variants in shape.

Xenomyza taciturna sp. n.

(Text-figs 61, 62)

A variable species, by far the most numerous in the present collections, and showing a considerable range of size and colour. It may be that more than one species is confused here, but the characteristic male genitalia vary between the two types shown in Text-figs 61, 62, without any constant differences.

 \Im Head. Ground colour brown, covered with brown tomentum; frons entirely tomented, except for ocellar tubercle; face mostly bare and shining brown except for upper third. Vertex with long and fairly dense black hairs. Face with very sparse brown hairs and a moustache consisting of only 5–6 black bristles in a single row. Antennae black-brown with black hairs. Proboscis and palpi black-brown but with pale hairs. Occiput with grey tomentum and white bristles.

Thorax brown, entirely covered with tomentum except for edges of humeri and of postalar calli. Tomentum of mesonotum whitish, with a pattern of three stripes in brown. Scutellum covered with whitish tomentum. Pleura with grey tomentum and a dense tuft of yellow hairs on metapleuron; other pleura with only sparse yellowish hairs.

Abdomen black-brown in ground colour, covered uniformly with yellowish grey tomentum except for a transverse band basally on second segment. Hairs sparse, yellowish, but not noticeably longer laterally. Venter similar. \Im genitalia as in Text-figs 61, 62, shining redbrown, contrasting with dull, blackish abdomen.

Legs clear mahogany-brown with rather long, yellowish clothing hairs, and a few fine black bristles. Hind femora as in Text-fig. 66.

Wings clear, colourless. Halteres yellow, including knob.

Length of body 8 mm ; of wing 7 mm.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 3461, Inimvua, 16.v.1952 (IPNC).

Paratypes. 3488, same data as holotype, 5 3, 16 \bigcirc (IPNC) ; Garamba National Park, 3387 Mt. Embe, 3 \bigcirc , 17–21–iv.1952 ; 3351, 3352 Pigidala, 3 \bigcirc , 22–iv–1952 ; 3476, 3514, 3515 Aka/2, 3 \bigcirc , 22–v–1952 ; 3481, 3499, Dedegwa, 2 \bigcirc , 21–v.1952 ; 3941 II/gc/6, 1 \bigcirc , 14–viii–1952 ; unnumbered, 1949–52 ; 469 I/a/1, 1 3, 1–v–1950 (*G. Demoulin*) (IPNC).

This species shows considerable variation in size and colour, partly arising from differences in the age and state of preservation of the specimens, but with unusually large variations even after allowing for these factors. This is particularly true of the specimens in the collection of the Musée R. de l'Afrique centrale, many of which are considerably bigger and more yellow than the specimens from the P.N.G. For the present I provisionally identify all specimens with the male genitalia notched as in Text-figs 61, 62 as belonging to *taciturna*, but I feel sure that eventually it will be possible to set aside two, if not three species in this complex. The Congo specimens include a good series from Kifumashi (most nearly resembling the typical series from P.N.G.); Kapanga; Mayumbe; Stanleyville; Elisabethville and Mayidi. I do not list these doubtful specimens as paratypes.

Xenomyza amphora sp. n.

(Text-figs 63, 65)

Distinguished from the other species by the characteristic shape of the hind femora, which are narrow and tubular for the basal half, abruptly swollen and flask-shaped apically.

 \diamond Head. Frons and face dull brown, entirely tomented ; without obvious hairs except for a fringe of short black hairs across vertex, and on ocellar tubercle ; very short black hairs on face are visible only at an oblique angle. Moustache consists of four black bristles on epistoma. Antennae with first segment shining brown, second tomented black-brown, both with black hairs ; third segment shining black-brown, aristiform extension white apically. Proboscis and palpi brown with black hairs. Occiput red in ground colour with thin brown tomentum and fine black hairs.

Thorax. Mesonotum dark brown, yellow on humeri, postalar calli, scutellum and a prescutellar area. Also with faint traces of two narrow black stripes, with brown tomentum but with no obvious hairs. Pleura dull, yellow and brown, entirely tomented, hairs only on metapleuron before halteres.

Abdomen strongly constricted basally, with whole of second segment and base of third narrowed, third segment then broadening abruptly; posterior abdomen has an oval outline. Shining red-brown, more yellow laterally, and all the broader segments with close-lying short brown and black hairs. Venter reddish with a few short black hairs. \Im genitalia (Text-fig. 63) downturned, with on each side a long process and a cluster of three strong black bristles.

Legs blackish brown, translucent. Basal half of hind femora and hind tibiae more yellowish, slender, apically clavate and blacker. Hind femora with a few strong, short spines ventrally near tip (Text-fig. 65), and other bristles on enlarged hind trochanters. Bristles and hairs of legs black, sparse.

Wings uniformly dark brown, with dense microtrichiae on both surfaces. Halteres with red stem and black knob.

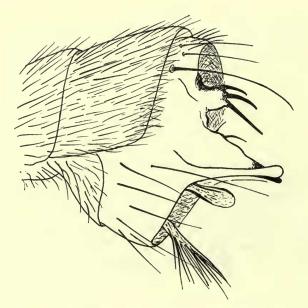


FIG. 63. Xenomyza amphora, 3 genitalia.

Length of body 9 mm ; of wing 9 mm. Q closely similar.

Holotype J. UELE : Bambesa, ix-xii.1933 (H. J. Brédo) (MRAC).

Paratypes. Same data as holotype, $2 \$; Leopoldville : Kikwit, $1 \$, x.1920 (*P. Vanderijst*) ; TERR. DE KASONGO : R. Lumami, $1 \$, x-xii.1950 (*Benoit*) (MRAC).

Xenomyza poseidon sp. n.

(Text-figs 64, 66)

A brilliant little species, with most of mesonotum and legs shining black. It has hind femora like those of *scutellata* sp. n., but has the colour-differences shown in the key.

 \diamond Head shining black in ground colour, with dense pale yellow tomentum, which leaves certain clearly defined areas bare, shining black : a narrow triangle surrounding ocellar tubercle; a transverse line through bases of antennae ; lower third of face, underlying all swollen facial tubercle. Moustache consisting of 4-6 isolated black bristles ; short hairs pale, present only at vertex and on parafacial areas. Antennae black, third segment and apex of second more mahogany-brown, apical half of arista white ; first two segments with black hairs, third segment elongate, tapering. Palpi black with black bristles ; antennae black-brown with yellow hairs. Occiput entirely tomented grey, with a single row of light yellowish occipital bristles.

Thorax shining black, with dense yellowish white tomentum, which leaves certain areas bare and shining black; mesonotum with a broad, divided, median stripe, flanked by the usual double spot on each side, but all stripes end abruptly opposite wing-bases. Scutellum covered with tomentum except for a very narrow black rim. Numerous very short black bristles in clusters, especially thick on upper supra-alar area. Pleura similarly covered with tomentum,

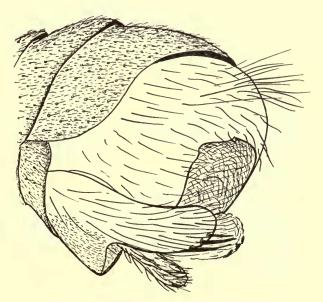


FIG. 64. Xenomyza poseidon, 3 genitalia.

but without short spines, leaving bare two large areas, one on mesopleuron and one immediately behind it, on pteropleuron. Pronotum, propleuron and metapleuron with fine pale yellowish hairs. No marginal scutellar bristles are visible.

Abdomen without a constriction (cf. amphora sp. n.), but second segment distinctly grooved transversely. Abdomen, like thorax, black in ground colour, with areas of white tomentum anteriorly and laterally on each segment (only laterally on second segment), and with areas of short spines posteriorly and laterally on all segments. Venter shining black with posterior tomentum on each segment, and with short yellowish hairs. Genitalia as in Text-fig. 64. Legs black, middle and hind tibiae orange, darker at tip. Hind femora as in Text-fig. 66,

Legs black, middle and hind tibiae orange, darker at tip. Hind femora as in Text-fig. 66, swollen along whole length, and with a double row of strong black spines ventrally. Other femora less swollen, and with only isolated spines. Bristles and most hairs black, but many clothing hairs yellow.

Wings almost uniformly brown, alula a little paler. Halteres orange including knob. Length of body 10 mm; of wing 9 mm.

Q Similar, knob of halteres dusky.

Holotype J. KATANGA : Elisabethville, 12.xii.1924 (MRAC). Paratype Q. Elisabethville, Lubumbashi, 20.xii.1920 (Dr. M. Bequaert) (MRAC).

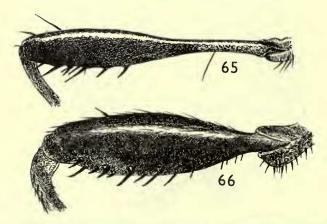
Xenomyza scutellata sp. n.

(Text-fig. 67)

Shares with *poseidon* sp. n. the uniformly swollen hind femora, with double row of ventral spines, but instead of being shining black, the entire legs are honeybrown, with long, recumbent clothing hairs ; differs also in having the mesonotum more tomented but the scutellum, in contrast, bare, shining brown.

& Head black-brown, covered with dense brown tomentum, frons and face with no clearly defined bare areas. Venter with a small number of long, black hairs : frons without long hairs ; face covered with rather long, pale yellow hairs, which are reclinate, and grow upwards along face. Moustache consists of a double row of yellow bristles on mouth-margin. Antennae black : first segment with a long, black bristle ; second with a shorter brown one ; aristiform extension long, white apically. Proboscis and palpi black with yellow hairs.

Thorax shining black in ground colour, entirely covered with tomentum, but in preserved



FIGS 65, 66. Xenomyza spp., hind femur of 3. 65, X. amphora ; 66, X. poseidon.

specimens this may be rubbed away in irregular areas. Tomentum is bronze, more yellow towards sides and posteriorly: in contrast, humeri, posterior calli and scutellum are all bare, shining brown. Yellow bristles, though fine, are relatively strong for the genus *Xenomyza*, and follow lines of dorso-centrals and acrostichals, as well as clustering laterally. Scutellum with 5-6 quite strong yellow marginals. Pleura covered with tomentum, yellowish, partly brownish, and with unusually abundant pale yellow hairs on pro-, meso- and metapleura.

Abdomen shining black in ground colour, with bronze tomentum. First segment with welldeveloped transverse membranous area, posteriorly bare and shining; other segments only irregularly shining where rubbed. Almost bare of hairs on disc, but tufts of longer yellowish hairs laterally; ventrally with whitish tomentum and pale yellowish hairs. Genitalia as in Text-fig. 67.

Legs honey-brown, femora and tarsi rather darker than tibiae. Hind legs noticeably long and thick compared with those of fore and middle legs; hind femora strongly and uniformly swollen, with a double row of short, black spines ventrally. Otherwise legs mostly covered with rather long yellow bristles and long, recumbent yellow clothing hairs; only tarsi with substantial numbers of black bristles.

Wings smoky black-brown, more intensively so anteriorly. Halteres yellow with whitish knob.

Length of body 7 mm ; of wing 7 mm. \Im Similar.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 3450, Aka, 14.V.1952 (IPNC).

Paratypes. GARAMBA NATIONAL PARK : P.N.G., Aka, $2 \Leftrightarrow$, 22.v.1952 (IPNC) ; Eala, $1 \Leftrightarrow$, ix.1930 (*Dr. P. Staner*) ; Wamba, $1 \Leftrightarrow$, 1936 (*Dr. Degotte*) ; Bambesa, $1 \Leftrightarrow$, 30.viii.1933 (*J. V. Leroy*) (MRAC).

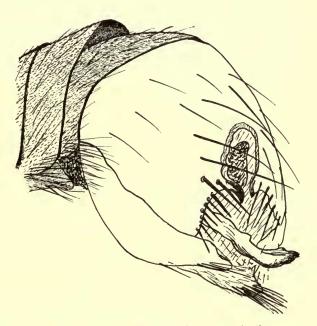


FIG. 67. Xenomyza scutellata, 3 genitalia.

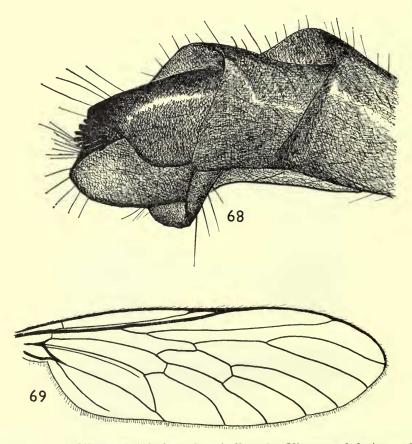
OLIGOPOGON Loew

Oligopogon Loew, 1847: 497. Type-species: O. hybotinus Loew, monotypic.

This is a strange, small genus, which has attributes of both Stichopogonini and Xenomyzini. The female genitalia closely resemble those of *Stichopogon* (Text-fig. 68), but the head is quite unlike the characteristic saddle-shaped vertex and scaly moustache of the Stichopogonini. Instead, it is goggle-eyed, with a fringed antennal style, and is much like *Rhipidocephala* of the Xenomyzini. In fact, *Oligopogon* looks like a head and thorax of *Xenomyza*, with an abdomen of *Stichopogon* and legs of a Saropogonine genus such as *Holopogon*. Engel (1929: 372) says that *Oligopogon* has strong discal bristles on the abdomen, and in his key he gives these as a means of separating *Oligopogon* from *Rhipidocephala*, but there are no such bristles in any specimen that I have seen.

One constant character of *Oligopogon* is the small size of the discal cell (Text-fig. 69), a feature which excludes *O. atrum* Bigot from the genus.

The type-species, O. hybotinus Loew, was described from the island of Rhodes,



FIGS 68-69. 68, Oligopogon hybotinus, Q genitalia ; 69, Oligopogon hybotinus, wing.

and this was the only Palaearctic record known to Engel (1929 : 372) ; the BMNH has one female of *hybotinus* from Turkey. Efflatoun (1937 : 290) described a distinct species *nitidus* from the Red Sea coast (Gebel Elba), which forms a link between the Palaearctic *hybotinus* and the other species of *Oligopogon* in the Ethiopian Region.

In 1858 Loew extended Oligopogon to the Ethiopian Region by describing O. penicillatus from Caffraria. Engel (1932) added O. pollinosus from Rhodesia, and Engel & Cuthbertson (1937) described O. nigripennis from the Vumba Mountains of S. Rhodesia. O. nigripennis, with its dark wings and rather robust appearance sounds as if it might, in fact, be a Rhipidocephala, but I have seen no specimen of it, and include it in the key from the description, for the sake of completeness.

Finally, *Rhipidocephala hyalipennis* Oldroyd (1959), from Madagascar, is properly an *Oligopogon*. It seems, therefore, that *Oligopogon* extends from the eastern Mediterranean down to the Cape, and it is not surprising that the present collections should include a new species from the Katanga, as well as a series of specimens from Urundi that I am unable to separate from the Palaearctic *hybotinus* Loew.

The following key includes all the species of *Oligopogon* at present known to me, but these small, obscure flies easily escape notice, and it is very likely that other species will subsequently be discovered.

KEY TO THE SPECIES OF OLIGOPOGON IN THE ETHIOPIAN REGION

I	Wings brown
-	Wings clear
2	Mesonotum with grey anteriorly; posterior mesonotum and scutellum shining black
	nigripennis Engel & Cuthbertson, 1937: 14
-	Mesonotum with yellow or white tomentum, and 3 shining black longitudinal stripes;
	scutellum shining black
3	Mesonotum with shining black stripes separated only by narrow bands of brassy
	tomentum. Scutellum inflated, entirely shining black except for a narrow
	tomented strip at base; scutellar margin with some weak hairs but no strong
	bristles
	Mesonotum without distinct longitudinal bare stripes, at least anteriorly, though it
	may have bare spots. Scutellum sometimes with strong bristles 4
4	Scutellum entirely tomented, with two long, whitish, marginal bristles 5
_	Scutellum partly shining, inflated, with black bristles or none at all 6
5	Frons relatively broader, not so deeply excavated at vertex, ocelli not falling below
	level of eyes. Femora entirely yellow or yellow-brown pollinosus Engel, 1932 : 282
	Frons relatively narrower, ocelli falling well below level of eyes. Femora blackish
	brown with brown tips hyalipennis Oldroyd (Madagascar), 1959 : 277
6	Femora and antennae yellow with distinct dark band & harlequini sp. n. (p. 296)
-	Femora and antennae not distinctly banded, though sometimes dark with base and
	tip narrowly pale
7	Femora shining black, only extreme base and tip red, contrasting strongly with
-	orange hind tibiae. Hairs of antennal style very long, as long as third segment
	superciliatus sp. n. (p. 297)
	Femora yellow or brown, but not contrasting strongly with tibiae. Hairs of antennal
	style not as long as third segment
8	Abdominal segments with basal bands of grey tomentum continuous. Legs bright
	orange-yellow

Oligopogon harlequini sp. n.

Distinguished from all the other species of *Oligopogon* by the conspicuous orange and black bands of the antennae and legs.

 δ Head. Eyes in dried specimens often rusty brown with distinct and symmetrical black spots. Face and frons almost parallel-sided, about two-thirds as broad as one eye; black-brown, covered with dense brassy tomentum. Ocellar tubercle large, also covered with brassy tomentum, but with one pair of long, black, ocellar bristles, and several smaller pairs. Frons with fine, inconspicuous short brown hairs; moustache covering lower half of face, but rather sparse, with a few stronger bristles, and a number of fine bristles, all yellow. First two antennal segments black, with brassy tomentum and yellow hairs; third segment orange on basal two-thirds, black on apical third; first segments of style yellow, bare; second segment of style black with black hairs. Proboscis and palpi black with yellow hairs. Occipital bristles in a single row, longer and black dorsally, shorter and yellow ventrally. No distinct beard.

Thorax densely covered with brassy tomentum, with an unusual arrangement of bare, shining black spots, all in posterior half of mesonotum : a short median stripe, flanked by crescentic spots extending into supra-alar area, and a small spot on each side just in front of suture ; postalar calli partly bare ; two small spots of brown tomentum anteriorly ; scutellum bare posteriorly, tomented anteriorly. Mesonotum clothed with short, erect, fine hairs, black anteriorly and medially, yellow posteriorly and laterally ; two strong, yellow notopleural bristles, otherwise no strong bristles, even on scutellum. Pleura, including postscutellum, entirely covered with brassy yellow tomentum, with fine yellow hairs on mesonotum, and bristly yellow hairs in mesopleural fringe.

Abdomen mostly shining. Dorsally each segment brown anteriorly, black posteriorly, the proportion of black greatest on basal segments, and least towards tip of abdomen. Third to sixth segments also with a narrow basal band of white tomentum, which extends along extreme lateral margin. Hairs fine, yellow, semi-recumbent. Venter mostly light brown, with thin white tomentum, and each segment with a pair of large, bare spots. Male terminalia black or brown, with yellow hairs.

Legs yellow-brown, with distinct black bands : each femur has a broad preapical band, and each tibia a prominent black tip.

Wings clear, hyaline, no grey patches. Halteres orange.

Length of body 5 mm ; of wing 4 mm.

 \Im Similar, but without dark bands on legs, which are entirely orange in the only female specimen known to me.

Holotype J. N. NIGERIA : Udubo, 28. viii. 57 (? collector) (SAIMR).

Paratypes. Same data as holotype, $2 \heartsuit$ (SAIMR); GOLD COAST : N. Territories, Yagaba, $1 \heartsuit$, 11.viii.1914 (*Capt. Armitage*) (BMNH).

Oligopogon hybotinus Loew

(Text-figs 68, 69)

Oligopogon hybotinus Loew, 1847:498.

URUNDI : Bururi, 4 3, 6 9, x.1948 (F. J. François) (MRAC)

GARAMBA NATIONAL PARK : P.N.G., 308, Mt. Ndogo, 2 3, 4 φ , 15.iii.1950, I/a/1, 1 φ , i.v.50 (*Demoulin*) ; 3461, Inimvua, 1 φ , 16.v.1952 (IPNC).

O. hybotinus was described from the island of Rhodes in the Eastern Mediterranean, and has hitherto not been known from anywhere else. In the BMNH is a female specimen from TURKEY: Antalya, Kaldivar nr Gasipazo, c. 750', 20–22.vii.1963 (E. James). I have no doubt that the specimen from Turkey is correctly identified as hybotinus, but I am not satisfied that the examples from Urundi are really conspecific. It is not possible to decide finally until male specimens of hybotinus from the Palaearctic Region are available to me.

Oligopogon superciliatus sp. n.

Somewhat resembling *O. penicillatus* Loew, but distinguished by the excessively long rays of the antennal style, which are as long as the entire third antennal segment, and by the strong contrast between the orange tibiae and tarsi and the black femora, orange only at base and tip.

 \bigcirc Head. Frons and face covered with dense yellow tomentum, rather long, and divided by a vertical median line on the frons. Two long, strong, black ocellar bristles, other hairs of frons weak and yellow. Moustache of sparse but strong black or blackish bristles. Antennae notable for the excessive length of the cilia of the style : all segments brownish, covered with yellowish tomentum, basal segments with black hairs. Proboscis and palpi black with yellow hairs. Occipital hairs in a single row : black, longer and proclinate dorsally ; white, shorter and straighter ventrally.

Thorax entirely covered with yellowish grey tomentum, in which there are bare, shining black spots of irregular extent in posterior half of mesonotum. Postalar calli brownish, bare. Scutellum with white tomentum anteriorly, shining black posteriorly ; hairs fine, erect, black, no strong marginals. Pleura black-brown in ground colour, entirely covered with yellowish grey tomentum ; metapleuron with a vertical row of long, yellowish bristles, and a few long yellow hairs on sternopleuron, otherwise pleura without hairs.

Abdomen dorsally shining black, each segment with an anterior band of white tomentum, broken in middle into two spots, which are extended laterally as narrow white margins ; hairs of dorsum short, white on tomented areas, black elsewhere, longer and paler at sides. Venter black-brown with thin white tomentum and yellowish anterior margin to each segment.

Legs. Femora black, red at base and apex ; tibiae and tarsi orange, only indistinctly darker towards tips of tarsi. Many short yellow hairs, but longer hairs and bristles mainly black.

Wings clear, hyaline, veins yellow anteriorly, black posteriorly. Halteres pale yellow.

Length of body 6 mm ; of wing 5 mm.

3 not yet known.

Holotype \mathcal{Q} . KATANGA : Elisabethville, Miss. Agric. (MRAC). Paratype \mathcal{Q} . Same data as holotype (MRAC).

Tribe ASILINI

This complex tribe of many genera is the most advanced in the family. It is characterized by the universal closure of the marginal cell, and by the third antennal segment ending not in a style, but in an *arista*, sometimes long, but always bare. The members of the tribe Ommatiini are distinguished from Asilini by having the antennal arista conspicuously feathered, but it is doubtful how much significance should be attached to this character (see under tribal heading Ommatiini).

Most Asilinae are elongate flies, with slender abdomen, and a generally dusty,

appearance. The genera fall into various groups, of which one of the most distinctive is the *Promachus*-group.

4

The PROMACHUS-GROUP

Characterized by having three submarginal cells in the wing in place of the usual two. The significance of this in the evolution of Asilidae has already been discussed in the general part of this paper. The genera of this group have a rather curious distribution : *Promachus* itself occurs in every zoogeographical region, with a complexity of subgenera ; *Apoclea* is located in the middle eastern arid belt ; *Philodicus* and *Alcimus* are Indo-ethiopian ; and in central and tropical South America there is a small complex of bee-like genera centred round *Mallophora*. Apart from the distinctly bee-like habitus of the *Mallophora* subgroup, the principal distinctions are in the wing-venation. Although these differences seem trivial when described, they are remarkably constant, and they are reinforced by other differences in appearance which confirm that the genera of this group—or at least the principal genera already mentioned—are really distinct.

PHILODICUS Loew

Philodicus Loew, 1848 : 391. Type-species : Asilus javanus Wiedemann, by original designation.

Teretromyia Bigot, 1859: 416. Type-species : Teretromyia cothurnata Bigot, by monotypy.

A typically asiline genus, which occurs in the Ethiopian and Oriental Regions, and in the intervening areas of Iran and Pakistan, which are technically Palaearctic. The African species were reviewed by Blasdale (1957) with a key, and comparative figures of male and female genitalia, from which the following species of the Congo Basin may easily be recognized.

Philodicus alcimoides Blasdale

Philodicus alcimoides Blasdale, 1957 : 137.

GARAMBA NATIONAL PARK : P.N.G., 214, I/b/2, 1 \bigcirc , 22.ii.1950 ; AKAM, 1 \bigcirc , 24.iii.1950 ; 529, AKAM, 1 \eth , 19.v.1950 ; I/b/3, 1 \circlearrowright , 24.iv.1950 (G. Demoulin) ; 585, I/a/M, 1 \bigcirc , 7.vi.1950 (G. Demoulin) ; 730, AKAM, 1 \bigcirc , 28.vii.1950 (IPNC).

Philodicus doris (Curran)

Alcimus doris Curran, 1927 : 18. Philodicus doris (Curran) Blasdale, 1957 : 144.

GARAMBA NATIONAL PARK : P.N.G., 316, I/a/1, I 3, I \bigcirc , 20.iii.1950 ; 465, I/b/2s, I 3, 26.iv.1950 ; 497, I/a/3, I 3, 8.v.1950 ; 483, I/a/1, I \bigcirc , 5.v.1950 ; 529, AKAM ; I441, II/db/4, I 3, I \bigcirc , 23.iii.1952 ; I444, II/bd/4, I \bigcirc , 23.iii.1951 ; I458, II/fc/5, 8 3, 10 \bigcirc , 27.iii.1951 ; I461, II/fc/18, I 3, 28.iii.1951 ; I494, II/fd/17, I 3, 4.iv. 1951 ; 1537, II/gc/7, I \bigcirc , 14.iv.1951 ; 1672, II/gd/4, 2 3, I \bigcirc , 8.v.1951 ; 1506. II/gf/10, 2 \bigcirc , 6.iv.1951 ; II/gd/4, 2 3, I \bigcirc , 13.iv.1951 ; 1798, II/fd/15, I 3, 24.v. 1951 ; 1803, II/fd/17, 1 Å, 25.v.1951 ; 1824, II/fd/17, 1 \bigcirc , 28.v.1951 ; 1911, II/fc/6, 1 Å, 13.vi.1951 ; 2910, II/fd/17, 1 Å, 1 \bigcirc , 14.xii.1951 ; 3250, Ndelele, K 120/2, 5 Å, 4 \bigcirc , 28.iii.1952 ; 3298, Ppk, 14/g/7, 8 Å, 2 \bigcirc , 4.iv.1952 (IPNC).

ITURI : Akini, N. Aru, I \mathcal{Q} , v.1936 (*Dr. Pasteels*) ; LOMAMI : Lusuku, I \mathcal{Q} , xii.1930 (*P. Quarré*) ; KASAI : Poste II, I \mathcal{Q} , 23.iv.1912 (*Dr. Mouchet*) ; Elisabethville, 2 3 (*Dr. Bequaert*) ; Kasai, I 3 (*Dr. Walker*) (MRAC).

Philodicus nigrescens Ricardo

Philodicus nigrescens Ricardo, 1921 : 181 ; Blasdale, 1957 : 145.

GARAMBA NATIONAL PARK : P.N.G., 71, I/o/1, 1 3, 28.xii.1949 ; 74, I/b/2, 1 3, 28.xii.1949 ; 75, I/b/3, 2 \bigcirc , 2.xii.1949 ; 146, I/a/2, 1 3, 2.i.1950 (G. Demoulin) ; 214, I/b/2, 2 3, 2 \bigcirc , 22.1ii.950 ; 261, I/b/3, 1 \bigcirc , 305, Mt. Ndogo, 4 3, 2 \bigcirc , 15.iii.1950 ; 327, Akam, 1 3, 24.iii.1950 ; 483, I/a/1, 1 3, 5.v.1950 (G. Demoulin) ; 529, Akam, 4 3, 2 \bigcirc , 19.v.1950 ; 585, I/a/M, 3 3, 7.vi.1950 (G. Demoulin) ; 853, I/o/3 arcl, 2 3, 1 \bigcirc , 29.ix.1950 (G. Demoulin) ; 1426, II/fd/18, 1 \bigcirc , 19.iii.1951 ; 1458, II/fc/5, 1 \bigcirc , 27.iii.1951 ; 1461, II/fc/18, 1 \bigcirc , 28.iii.1951 ; 1561, II/fb/18, 1 \bigcirc , 18.iv.1951 (J. Verschuren) ; 1576, II/fb/4, 1 3, 19.iv.1951 (J. Verschuren) ; 1538, II/hc/4, 2 \bigcirc , 20.iv.1951 ; 2379, II/fb/4, 1 3, 2 \bigcirc , 5.ix.1951 ; 3500, Nagero, 1 \bigcirc , 10.v.1952 ; 2917, II/gc/15, 1 3, 17.xii.1951 (IPNC).

MANYEMA : Nyangwe, 9 3, 5 9, 4.v.1918 (R. Mayné) ; Niambi, 1 3, 23.iv.1931 (G. F. de Witte) ; TANGANIKA : 1 9 (Lemaire) ; KATANGA : 1 3, 18.v.1925 (G. F. de Witte) ; UELE : Dunga, 1 9 (de Greef) ; Bukama, 3 9, xi.1911 (Dr. Bequaert) ; LUALABA : Kabelwe, 1 9, 24.vi.1947 (Dr. M. Poll) (MRAC).

Philodicus furunculus Blasdale

Philodicus furunculus Blasdale, 1957: 146.

GARAMBA NATIONAL PARK : P.N.G., 497, I/a/3, I \bigcirc , 8.v.1950 ; 509, Km 17, 2 \bigcirc , 10.v.1950 ; 594, I/a/1, I \bigcirc , 12.vi.1950 ; 1494, II/fd/17, I \eth , 4.iv.1951 ; 1824, II/fd/17, I \eth , 28.v.1951 ; 1855, II/gc/4, I \bigcirc , i.vi.1951 ; 2024, II/gd/14, 2 \bigcirc , 30.vi. 1951 ; 3401, II/gc/10, I \bigcirc , 20.iv.1952 ; 3410, II/gd/4, 2 \bigcirc , 2.v.1952 ; 3449, II/gd/4, I \bigcirc , 8.v.1952 ; 3476, Aka/2, 2 \heartsuit , 19.v.1952 ; 3488, Inimvue, I \circlearrowright , I \heartsuit , 20.v.1952 ; 3515, Aka/2, I \heartsuit , 22.v.1952 ; 3583, Garamba/2 (source), I \heartsuit , 6.vi.1952 (IFNC).

KATANGA : Elisabethville, 21 3, 11 \bigcirc (various collectors) ; Lomami, Kambaye, 3 3, 6 \bigcirc , vii.1930 (*P. Quarré*) ; LULUA: Kapanga & R. Kapelekese, 1 3, 4 \bigcirc , 1932/33 (*F. G. Overlaet*) (MRAC).

Philodicus temerarius (Walker)

Trupanea temerana Walker, 1851 : 121 ; Blasdale, 1957 : 145.

This species is not represented in the collections from the Parc National du Garamba, but it is widespread in the Congo Basin.

The specimens in the collections of the Musée Royale de l'Afrique centrale are

too numerous to be listed in detail, but there are specimens from the following localities : Bambesa ; Eala ; Mayidi ; Congo da Lemba ; Stanleyville ; Ituri ; Coquilhatville ; Uele ; Bambesa ; Tshuapa ; Bokuma ; Mayumbe ; Kisantu ; Sankuru ; Komi ; Equateur ; Abumombazi ; Léopoldville.

Philodicus swynnertoni Hobby

Philodicus swynnertoni Hobby, 1933: 109; Blasdale, 1957: 144.

URUNDI : Gihanga, Ruzizi, 1 3, 5 9, xi.1951 ; Terr. de Bubanza, 3 3, 23.ix.1951 (FJF).

LULUA : Kasai, 2 3, 4 \bigcirc , 1918 (*Dr. Walker*) ; Luashi, 1 3, xi.1938 (*F. Freyne*) ; LOMAMI : LUSUKU, 2 \bigcirc (*P. Quarré*) ; UELE : Aba, 2 3, 5 \bigcirc (*M. Hutereau*) ; LUKUGA : Niemba, 1 3, 1 \bigcirc , xi.1917 (*Dr. Pong*) ; Beni Bendi, 1 3, v.1915 (*R. Mayné*) ; Bogo, 1 3, 7.iii.1912 (*A. Pilette*) ; SANKURU : Pania, Natumbo, 1 3, 1947 (*V. Lagae*) ; ITURI : Akini (*A. Aru*), 2 \bigcirc , v.1936 (*Dr. Pasteels*) (MRAC).

Philodicus cinerascens (Ricardo)

Alcimus cinerascens Ricardo, 1900 : 139. Philodicus umbripennis Ricardo, 1921 : 184. Philodicus cinerascens (Ricardo) Blasdale, 1957 : 139.

URUNDI : Terr. de Bubanze, 2 9, 6.iii.1952 ; Terr. de Bururi, 3 3, 1 9, 19.v.1952 ; Rumonge, 7 3, 4 9, 1948-49 (FJF).

TANGANIKA : Mpala, 3 3, vii/viii, 1953 (H. Bomans) ; E. TANGANIKA : Kigoma, 1 3, 3 φ , ix.1918 (R. Mayné) ; Albertville, 2 3 (R. Mayné) ; Kasenyi, 2 3, 2 φ (H. J. Brédo) ; URUNDI : Rumonge, 6 3, 4 φ , 7.iii.1953 (P. Basilewsky) (MRAC).

PROMACHUS Loew

Trupanea Macquart, 1838 : 91, nec Schrank, 1803. Type-species : Asilus maculatus Fabricius, by original designation.

Promachus Loew, 1848 : 390. Type-species : Asilus maculatus Fabricius, by designation of Coquillet, 1910.

A large and complex genus, which occurs in all the zoogeographical regions, and is easily recognized by the particular shape of the three submarginal cells.

Although distinctive at generic level, *Promachus* includes a great diversity of species. Hull (1962) recognizes six subgenera (not five as he says), but the status of these is uncertain. The subgeneric differences are mostly in the antennal arista and in the form of the ovipositor : the former is often variable between closely related species, and the latter appears to be an adaptive character, related to the site of oviposition, and thus not necessarily indicative of relationships.

The African species have never been revised in their entirety, as yet. Miss Ricardo (1920) published partial keys, but besides being incomplete they were illconstructed and difficult to use. At the present time (1969) Mr. P. Blasdale, who revised the African species of *Philodicus* in 1957, has work in progress on the species of *Promachus*, and has kindly examined the species of *Promachus* taken in Garamba by the Mission H. De Saeger.

Promachus sp. 1

GARAMBA NATIONAL PARK : P.N.G., 1412, II/gd/4, 5 Å, 1 \Diamond , 17.iii.1951 ; 1441, II/cb/4, 1 \Diamond , 23.iii.1951 ; 3450, Aka, 1 Å, 2 \Diamond , 14.v.1952 ; 1299, II/hc/10, 9 Å, 7 \Diamond , 28.ii.1951 ; 1314, II/kc/10, 3 Å, 4 \Diamond , 2.iii.51 ; 1458, II/fc/5, 3 Å, 1 \Diamond , 27.iii.1951 ; 1444, II/hc/4, 1 \Diamond , 23.iii.1951 ; 1506, II/gf/10, 1 \Diamond , 6.iv.1951 (IPNC).

Promachus sp. 2

GARAMBA NATIONAL PARK : P.N.G., 1299, II/hc/10, 1 &, 2 Q, 28.11.1951 ; 3298, PpK 14/g/7, 1 &, 4.iv.52 ; 3267, Ndelele, 1 &, 1 Q, 27.iii.1952 ; 1412, II/gd/4, 5 &, 5 Q, 17.iii.1951 ; (IPNC).

Promachus sp. 3

GARAMBA NATIONAL PARK : P.N.G., 1314, II/ke/10, 3 3, 1 2, 2.iii.51 ; 3298, PpK 14/g/7, 2 3, 4.iv.1952 (IPNC).

This and the previous species are obviously closely related, and the existence of four indeterminate females suggests that they might be conspecific.

Promachus sp. 5

GARAMBA NATIONAL PARK : P.N.G., 2615, PpK 529, 1 3, 16.x.1951 (IPNC).

Promachus sp. 6

Garamba National Park : P.N.G., 903, I/a/1, 1 3, 26.х.1950 ; 1273, Gongala, 1 ♀, Oct. 1950 (IPNC).

Promachus ugandiensis Ricardo

GARAMBA NATIONAL PARK : P.N.G., 176, I/a/2, 1 3, 23.i.1950 ; 204, I/b/3, 2 φ , 8.x.1950 ; 205, I/a/1, 1 3, 13.xi.1950 ; 3134, Mabanga, 9''', 2 3, 1 φ , 19.11.1952 (IPNC).

THE FASCIATUS-GROUP

This is a striking group of species centred round *Promachus fasciatus* (Fabricius), 1775, and recognized by having the first three tergites of the abdomen adorned with double fringes of white or golden hairs.

The present collection contains four females of this species-group. The males have distinctive genitalia, and may be identified by using an excellent paper by Hobby (1936 : 182–199, 231–249, 274–278). Unfortunately the females cannot be confidently identified, except by association with males, and so the females in this collection can only be listed, as follows :

GARAMBA NATIONAL PARK : P.N.G., 1527, II/gd/4, 1 \bigcirc , 13.iv.1952 ; 1872, II/bc/8, 1 \bigcirc , 5.vi.1952 ; 2059, II/gc/13s, 1 \bigcirc , 12.vii.1951 ; 2341, II/fd/17, 1 \bigcirc , 31.viii.51 (IPNC).

HELIGMONEURA Bigot

Heligmoneura Bigot, 1858 : 357, 662. Type-species : H. modesta Bigot, monotypic.

Engel (1927:135) discussed the definition and relationships of this genus, and especially its distinction from *Neomochtherus*, for which he presented a table. *Heligmoneura* is one of several genera in which the vein R_5 of the wing has a pronounced angle at mid-length; it has pilose metanotal callosities, and a low facial hump, which becomes nasiform through the narrowing of the face. In the male the upper forceps (epandrium) is forked, and often conspicuously so (Text-figs 70-72). The ovipositor is short and downturned.

Seven species from Africa and Madagascar remain in *Heligmoneura* after making allowances for past confusion with other genera such as *Neomochtherus* and *Neolophonotus*. The present collection contains three species, only one of which is from the P.N. Garamba. The three species are easily separated by the very distinctive male genitalia (Text-figs 70–72); a key to species using other characters, and applicable also to females, awaits a fuller study.

Heligmoneura laevis Engel

(Text-fig. 70)

Heligmoneura laevis Engel, 1927: 137.

This was one of the species recognized by Hermann, but not published before his

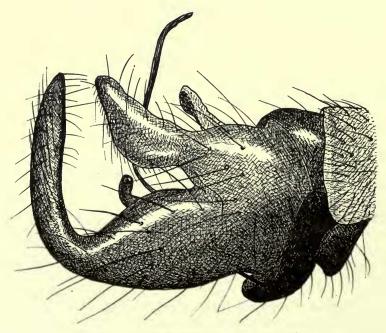


FIG. 70. Heligmoneura laevis, 3 genitalia.

death ; Engel (1927) attributes the species to 'Hermann *in litt*.', but it appears that Engel was the author of the published description, and hence of the name.

The form of the male genitalia (Text-fig. 70) appears distinctive, but small variations occur, and it is possible that more than one species has male genitalia of this type. A particular problem is *Neomochtherus litoralis* Lindner (1955), which is annotated in the original paper 'Auch nach Oldroyd " not *laevis* Engel, probably new ". .' I saw the specimen afterwards made type of *litoralis*, which was from Dar-es-Salaam, but it is not now before me. From the description and figure it is certainly a *Heligmoneura*, not *Neomochtherus*, and very close to *H. laevis*. It appears to differ from *laevis* in having more pale hairs and bristles on the thorax, but clearly this needs to be corroborated by evidence from more specimens.

H. laevis was described from the Waterburg District of the Transvaal, and is known from Malawi. The present record of the species from the P.N. du Garamba extends the range considerably, with *litoralis* in Dar-es-Salaam as a possible link.

GARAMBA NATIONAL PARK : P.N.G., 1249, II/id/4, $1 \Leftrightarrow 14.ii.1951$; 1494, II/id/17, 7 Å, 4 \Leftrightarrow , 4.iv.1951; 1527, II/gd/4, 2 \Leftrightarrow , 13.iv.1951; 1610, II/gd/4, 1 \Leftrightarrow , 25.iv.1951 (*J. Verschuren*); 1612, II/ee/14, 1 \Leftrightarrow , 26.iv.1951 (*J. Verschuren*); 2917, II/gc/15, 1 \Leftrightarrow , 17.xii.1951; 3401, II/gc/10, 1 Å, 29.iv.1952; 3449, II/gd/4, 1 Å, 8.v.1952; 1458, II/fc/5, 1 Å, 27.iii.1951; 1855, II/gc/4, 1 \Leftrightarrow , 1.vi.51; Nagero, 1 \Leftrightarrow , 2/29.ix.1954 (*Nebay*); 1537, II/gc/7, 1 Å, 14.iv.51; 1684, II/gd/4, 1 Å, 7.v.1951 (IPNC).

Heligmoneura modesta Bigot

(Text-fig. 71)

Heligmoneura modesta Bigot, 1858 : 357.

A West African species, which spreads across into the Congo Basin, and so has a distribution complementary to that of *laevis* above.

GARAMBA NATIONAL PARK : P.N.G., 786, $\pm/0/1$, 1 \bigcirc , 25.viii.50 (Demoulin) ; 868, I/0/2, 1 \bigcirc , 5.x.1950 (Demoulin) ; 944, I/0/1, 1 \bigcirc , 9.x.i.1950 (IPNC).

UELE : Bambesa, ix-x.1933 (J. V. Leroy ; H. J. Brédo), $3 \ 3, 4 \ 9$; Bambili (Dr. Rodhain), $1 \ 3$; Tukpwu, $1 \ 3$, ix.1937 (L. Leconte) ; Albertville, $1 \ 3$, i.1919 (R. Mayné) ; Libenge, 29.xi.1939, $1 \ 3$ (Leontovitch) (MRAC).

Heligmoneura rodhaini sp. n.

(Text-fig. 72)

A single male, abundantly distinguished from the preceding two species by the genitalia (Text-figs 70-72). The upper forceps are less deeply cleft than in those species, and suggest the even less elaborate male genitalia of H. africana Ricardo, from Nyasaland. This raises the question of the separation of *Heligmoneura* from Neomochtherus, readily apparent between typical species of each, but less certain when the genitalic differences are smaller.

 3° Head. Space between eyes broader than in H. modesta (cf. Engel, 1927 : 135), at antennae greater than length of first antennal segment, but not as great as sum of first plus second seg-

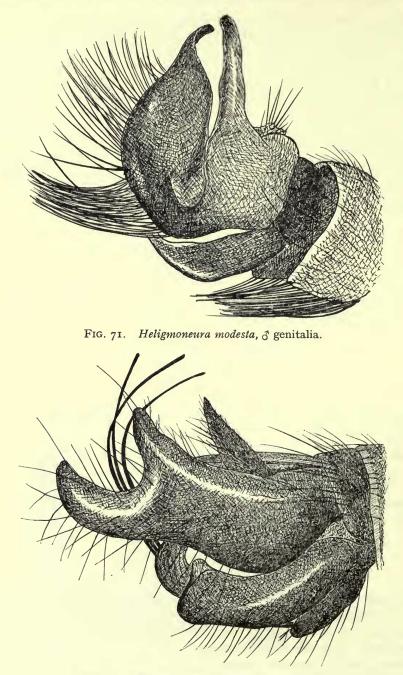


FIG. 72. Heligmoneura rodhaini, 3 genitalia.

ments; slightly narrower at vertex, and broader at mouth margin. Tomentum of face and frons brassy yellow; frons with black hairs along each eye-margin; facial hump moderate, of same shape as usual in *Heligmoneura*, but not so nasiform; moustache yellow centrally and ventrally, black dorsally. Antennae rather elongate, almost as long as height of one eye, al segments proportionately elongate, arista $1\frac{1}{2}$ times as long as third segment. Palpi and proboscis black with yellow hairs; beard and lower occipital bristles yellow, upper occipital bristles black.

Thorax. Pronotum with yellow bristles and yellow hairs. Mesonotum entirely tomented yellowish grey, with a rather indistinct pattern of brown; two longitudinal stripes, and three pairs of lateral spots; covered with short, bristly black hairs, and with longer, strong black bristles. Scutellum with short, black hairs and with two strong marginal bristles, which, in type-specimen, are one yellow and one black. Pleura uniformly tomented, with a few sparse yellow hairs, and with yellow bristles before halteres.

Abdomen dorsally dull black, with broad yellow hind margins, covered with ashy grey tomentum; clothed, except of yellow bands, with short, bristly black hairs, longer and stronger posteriorly on each segment, and stronger still laterally; strongest lateral hairs and bristles are yellow. Genitalia (Text-fig. 72) shining black, hairs and bristles mainly yellow or brown. Legs. Orange, with black trochanters, and small black tips to femora and to hind tibiae.

Hairs and bristles mainly black on hind legs and dorsally on others ; yellow elsewhere.

Wings infuscated at tip and along hind margin as far inwards as fork of M_{3+4} ; membrane also stained yellow.

Length of body 16 mm ; of wing 15 mm.

Holotype Q. CONGO : Semio, 20.ix.1913 (Dr. Rodhain) (MRAC).

CONGOMOCHTHERUS gen. n.

Type-species : Congomochtherus lobatus sp. n., by present designation.

The type-species bears a deceptive resemblance to *Machimus hirsutus* Ricardo, being generally black and grey, with distinctive reddish bands basally on the tibiae. *M. hirsutus*, however, is a true *Machimus*, with dorsocentral bristles extending forward of the transverse suture, and ovipositor flattened, bare, with free anal lamellae. *Congomochtherus* is distinguished by having the presutural dorsocentrals weak or absent, and by the spiny anal lamellae of the female (Text-fig. 73).

The male of *Congomochtherus* has an enlargement of the ninth sternite (hypandrium), which is quite different from the sclerotized process of the eighth sternite which is found in many *Machimus* (Text-fig. 74). In *Congomochtherus* the ninth sternite bears a brush or pencil of stiff black hairs, and in the species *lobatus* the sternite is extended posteriorly as a rounded lobe, which is yellow and of membranous appearance.

Congomochtherus is clearly allied to Machimus in facial and general structure; the genitalia somewhat resemble those of Neomochtherus, which also has no presutural dorsocentrals, but the spiny lamellae of the ovipositor have no counterpart except in genera such as Alcimus and Proctacanthus, which are not close related to Neomochtherus and Machimus. Vein R_5 is distinctly angled in the middle, and the metanotal lobes bristly.

Key to Species of CONGOMOCHTHERUS

- Legs black except for reddish rings at bases of tibiae and of femora. Ninth sternite of male large, with black bristles, but with no median lobe. Discal scutellar hairs white
 wh

Congomochtherus lobatus sp. n.

(Text-figs 73-75)

A predominantly black and grey species, the tibiae each with a distinct reddish ring basally, not extending along the dorsal surface.

 δ Head. Eyes close together, at vertex separated by little more than breadth of bases of antennae. Frons covered with brassy tomentum, which also covers ocellar tubercle, and with short, black, bristly hairs, including several on ocellar tubercle. Tomentum of face white, yellowish only on eye-margins; moustache black above, white in middle and below; facial tubercle half as high as face, well-defined. Upper occiput with strong black bristles; bristles and hairs of lower occiput and buccae white. Antennae black, with black hairs : third segment as long as first two together; arista as long as third segment, with microsegment and small apical style. Proboscis and palpi black with white hairs.

Thorax. Mesonotum entirely tomented : black, with dull yellowish patches behind humeri, extending into sublateral stripes ; posteriorly these stripes unite with lateral stripes above wing-bases. Scutellum dull black, inflated, with a recessed grey rim. Hairs and bristles black : dorsocentrals fairly strong posteriorly, but becoming weak or absent before reaching transverse suture : scutellum with two strong marginals. Pronotum with yellowish tomentum, white hairs and black bristles. Pleura covered with thick, ashy grey tomentum ; mesopleuron and sternopleuron showing areas of velvety grey, which shift according to the angle of the light.

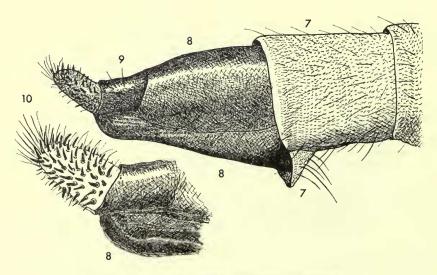
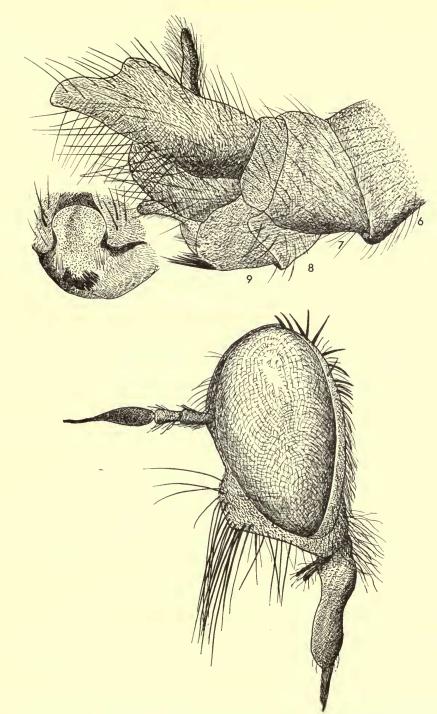


FIG. 73. Congomochtherus lobatus, 9 genitalia.

ASILIDAE OF THE CONGO BASIN



FIGS 74-75. 74, Congomochtherus lobatus, 3 genitalia. 75, Congomochtherus lobatus, head.

Hairs white, but some black bristles before halteres and on hypopygium.

Abdomen. Each tergite grey anteriorly, posteriorly and laterally, with a large, quadrate, dark brown spot. Hairs and bristles black on dark areas, white on grey areas. Venter grey, with hairs mostly white; no strong ventral bristles. Male genitalia distinctive (Text-fig. 74): ninth sternite has median, ovate, lobe, yellow, and lightly sclerotized; immediately anterior to this lobe is a cluster of stiff, backwardly-facing, black bristles.

Legs. Black, except for a narrow, reddish or orange ring at base of each tibia. Clothing hairs white, bristles white and black.

Wings almost uniformly greyish, with microtrichiae in all cells; marginal and first submarginal cells distinctly wrinkled. Halteres yellowish.

Length of body 14 mm ; of wing 10 mm.

Q Closely similar; ovipositor as in Text-fig. 73; eighth sternite extending backwards as a firm support beneath very spiny anal lamellae (tenth tergite).

Holotype J. N. NIGERIA : I.V.1912 (J. W. S. McFie) (BMNH).

Paratypes. Congo: Kalembelembe—Baraka, 2 J, 5 \mathcal{Q} , vii.1918 (R. Mayné); Manyama, 1 J (R. Mayné); UELE: Aba, 1 J, 20.iv.1914 (Dr. Rodhain); Kapiri, 1 \mathcal{Q} , x.1912 (Miss. Agric.); TANGANIKA: Mpata, 780 m, 1 J, vii–viii.1953 (H. Bomans); KATANGA: Elisabethville, 1 J, ii.1929 (Dr. Bequaert) (MRAC).

Congomochtherus penicillatus (Speiser)⁵

Machimus penicillatus Speiser, 1910 : 100.

Distinguished from *lobatus* by the male genitalia and the leg-colouring. Ninth sternite well developed, and with a tuft of black bristles (as in Text-fig. 74), but lacking the yellow median lobe. Legs black with reddish rings at bases of tibiae, and at bases of femora as well.

This species bears an extraordinary resemblance to *Machimus hirsutus* (Ricardo), the scanty and ill-preserved type-material of which was collected on the Mara River in Kenya by Capt. A. O. Luckman; yet *hirsutus* has neither the spiny lamellae of the female nor the extended ninth sternite of the male.

Recorded by Speiser from the lowlands surrounding Meru, Ngare na nyuki, and by Lindner (1955:40) from TANGANIKA: Ngaruka. KENYA: Narosswa R., $6 \stackrel{,}{\sigma}, 2 \stackrel{,}{\varphi}, 1912$ (*W. P. Lowe*); Masai Reserve, between Guaso Nyeri and Narosswa, $1 \stackrel{,}{\sigma}, 1 \stackrel{,}{\varphi}, 23.ii.1914$ (*Capt. A. O. Luckman*); Masai Reserve, Ngarenarok, 6000 ft, $1 \stackrel{,}{\varphi}, 31.xii.1913$ (*Capt. A. O. Luckman*) (BMNH). KIRI-KIRI: Nioka, fin $1 \stackrel{,}{\sigma}, 1 \stackrel{,}{\varphi},$ 1913 (Régie des Mines). (MRAC).

HOPLOPHEROMERUS Becker

Hoplopheromerus Becker, 1925 : 241.

Tsacas and Oldroyd (1967) revised this genus, which has an interesting distribution in Africa and in the Far East. They described two new species from the Congo Basin, and discussed relationships with *Heligmoneura* and *Neomochtherus*.

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⁵ While this paper was in the press, Dr. Tsacas has been kind enough to indicate to me certain specific differences between this species and one of the syntypes of *Machimus penicillatus* Speiser which he has been able to examine. It is possible, therefore that future study of the syntypical series, with selection of a lectotype, may require a renaming of the species recorded above as *penicillatus* Speiser.

MACHIMUS Loew

Machimus Loew, 1849: 1. Type-species: Asilus chrysitis Meigen, 1820, by designation of Coquillet, 1910.

Tolmerus Loew, 1849:94. Type-species: Asilus pyragra Zeller, 1840, by designation of Coquillet, 1910.

Conosiphon Becker, 1923 : 36. Type-species : Dysmachus pauper Becker, 1907, by original designation.

Typical *Machimus* has a distinctive structure, though no item of this is exclusive to this genus. Even the question whether or not the dorsocentral bristles extend ahead of the transverse suture is debatable : in typical *Machimus* there are one or two strong presutural dorsocentrals, but not as many as in *Dysmachus*.

The ovipositor of *Machimus* has the anal lamellae simple and free, not inserted into the ninth tergite as in *Dysmachus*, and not spiny as in *Congomochtherus*. In the male it is the eighth sternite that is prominent, not the ninth as in *Congomocherus*, and this sternite is often drawn out into a conspicuous process (Text-fig. 76) : conversely, it may be without process (Text-fig. 77).

Machimus has the metanotal lobes of the thorax hairy or bristly, and vein R_5 of the wing has a more or less conspicuous kink. These two characters separate Machimus clearly from the Neolophonotus-group of genera, as well as from Ommatius.

The species fall fairly easily into two groups : *Machimus (sensu stricto)* with a ventral process in the males, and with four or more scutellar bristles ; and those species that have no ventral process, and only a single pair of scutellar bristles. The latter may conveniently be referred to the subgenus *Tolmerus*, though a formal separation of the two subgenera is difficult.

The *Machimus* of the Ethiopian Region are mainly located in eastern tropical Africa, perhaps as an offshoot from the Palaearctic Region.

I	Scutellum with 4–8 bristles											2
-	Scutellum with only 2 bristles											5
2							. g	ymnus	Oldr	oyd,	1939	: 40
	Tarsi black											.3
3												-
	thorax ; four or five strong r	otopl	eurals	з.			. co	mans	Oldro	yd, I	940 :	158
	Thorax not excessively bristly	y;d	orsoce	entrals	s exte	nding	onl	y a lit	tle al	nead	of	
	transverse suture, then becon										ne	
	or two finer bristles .											4
4	Short hairs of scutellum black.											
	(? caudiculatus Speiser) ugandiensis Ricardo, 1919 : 56 (p. 310)											
	Short hairs of scutellum white	(? ‡	amme	las Sp	eiser,	1910	: 101) juxta	Oldr	oyd,	1939	:41
5	Legs entirely black, or with onl	y a fa	int tr	ace of	red a	t base	s of	tibiae				
					1	nigrip	es (]	Ricardo), 192	2:6	2 (p. ;	310)
	Tibiae extensively red dorsally											
6	,			-		•		-			-	-
	Tarsi black : tibiae reddish onl	y on (dorsal	surfa	ce	•	. h	irsutus	Rica	.rdo,	1920	: 62

KEY TO THE SPECIES OF MACHIMUS IN THE ETHIOPIAN REGION

Machimus ugandiensis Ricardo

(Text-fig. 76)

Machimus ugandiensis Ricardo, 1919: 56.

ITURI : Beni à Lesse, $4 \ 3$, $1 \ 9$, fin vi.1911 (*Dr. Martini*) ; Beni, $1 \ 9$ (*Lt. Bonnevie*) ; Beni, $2 \ 9$, x.1928 (*A. Collart*) ; Bunia, $1 \ 9$, vi.1928 (*P. Lefèvre*). URUNDI ; Bururi, 1800–2000 m, $23 \ 3$, $17 \ 9$, 5/12.iii.1953 (*P. Basilewsky*) ; RUANDA : Gitarama, 1850 m, terr, Nyanza, $1 \ 9$, i.1953 (*P. Basilewsky*) ; Kisanyi, $2 \ 3$, xi.1951 (*A. E. Bertrand*) ; Lac Mohasi, $1 \ 3$, iv.1934 (*H. Hegh*). KIVU : Kisengni, $1 \ 9 \ + 2$ spec., 1953 (*R. Van Saceghem*) ; Kashusha, $1 \ 3$, $1 \ 9$, 1937 (*Vandelannoite*) ; Ngoma, $1 \ 9$, 3.x.1932 (*L. Burgeon*) ; Lulega, $1 \ 3$, 8.xi.1925 (*Dr. H. Schouteden*) ; USUMBURA : $1 \ 9$ Bugarama, (*Dr. Henrard*) ; Rutschuru, $1 \ 3$, $1 \ 9$, 1.1928 (*Ch. Seydel*) ; Bukima, $1 \ 9$, iv.1948 (*J. V. Leroy*) ; Escarpment Kabasha, Chambi, $1 \ 9$, x.1933 (*Dr. de Wulf*) (MRAC).

URUNDI : Bururi, alt. 1950 m, 20 3, 14 9, vi.–x.1948 ; Bubanza, colline Kagunuzi (Imbo), alt. 900 m, 1 3, 1 9, 21.vi.1955 ; Kitega, 1 9, iii.1957 (FJF).

Machimus nigripes (Ricardo)

(Text-fig. 77)

Tolmerus nigripes Ricardo, 1922 : 62.

GARAMBA NATIONAL PARK : P.N.G., 1458, II/fc/5, 4 3, 2 9, 27.iii.1951 ; 1494, II/fd/17, 5 3, 8 9, 4.iv.1951 ; 1506, II/gf/10, 1 9, 6.iv.1951 ; 1525, II/gf/4, 1 9,

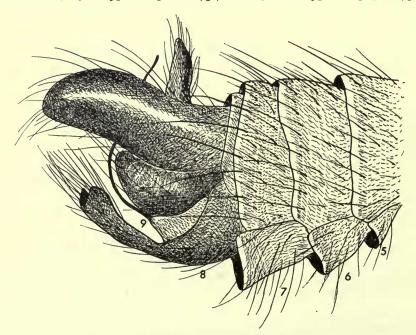


FIG. 76. Machimus ugandiensis, 3 genitalia.

10.iv.1951 ; 1576, II/fb/4, I \bigcirc , 19.iv.1951 ; 3450, Aka, 2 \bigcirc , 14.v.1952 ; 3488, Inimvua, I \bigcirc , 20.v.1952 ; 1671, II/fd/17, I \bigcirc , 8.v.1950 ; 3476, Aka/2, I \bigcirc , 19.v. 1952 ; 3480, Inimvua, I \bigtriangledown , 16.v.1952 ; 3583, Garamba/2 (source), I \circlearrowright , 6.vi.1952 ; 3656, PPSK, 5/3, I \bigcirc , 20.vi.52 (IPNC).

KATANGA : Elisabethville, Kifumashi, sur herbes vivantes, $3 \ 3, 2 \ 9, 9.xii.55 \ (M. Lips)$; Elisabethville (piège Harris), $1 \ 3, 1 \ 9, xi.1935 \ (P. Quarré)$; Elisabethville, Lumbumbashi, $2 \ 3, 1 \ 9, 11.12.1928 \ (Dr. M. Bequaert)$; Elisabethville, $1 \ 3, 1953 \ (H. Bomans)$; Elisabethville, $1 \ 9 \ (Miss. Agric.)$; Lubudi, $1 \ 9, viii-ix.1936 \ (M. Prinz)$; LUALABA : Kabada (Mutuka), $1 \ 9, xii.1953 \ (R. P. Th. de Caters)$; Kolo-Kwilu-Madiata, $1 \ 9, ix.1913 \ (R. Verschuren)$; Escarpment Kabash-Chiambi, $1 \ 9, x.1933 \ (Dr. de Wulf)$; LOMAMI : Kmaina, $1 \ 9, 1930 \ (R. Massart)$; UELE : Faradje, $1 \ 9, 14.v.1914 \ (Dr. Rodhain)$; Bondo, Yakoma, $1 \ 3, ix.1914 \ (Dr. Rodhain)$; Bambesa, $1 \ 9, 25.viii.1933 \ (J. V. Leroy)$; La Kando, $1 \ 3, Nov. 1925 \ (Ch. Seydel) \ (MRAC).$

ASTOCHIA Becker

Astochia Becker, 1913 : 538. Type-species : Astochia metatarsata Becker, monotypic.

Typical specimens of *Astochia* are distinctive. The male genitalia are characteristically pendulant, with the upper forceps rather widely set apart from the lower forceps and claspers (Text-fig. 78). In the female the telescopic ovipositor incorporates the seventh to ninth segments, as in *Neoitamus*. Typically, in both sexes, the anterior basitarsus is swollen and very bristly.

Astochia closely resembles *Neoitamus* which, typically, can be easily separated from *Astochia* by the proclinate postoccipital bristles, the different male terminalia, and the normally developed basitarsi. These differences are shown clearly by the

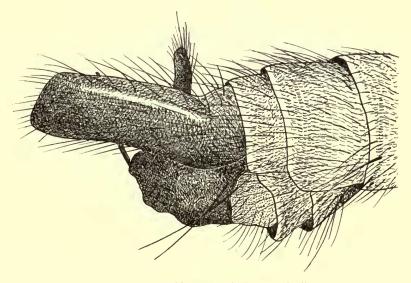


FIG. 77. Machimus nigripes, 3 genitalia.

type-species of the two genera, Astochia metatarsata Becker of the Oriental Region, and Neoitamus cyanurus of the Palaearctic. The species of the Ethiopian Region do not fall so easily into the two genera, and the following assignments are provisional.

Astochia armata (Becker)

Neoitamus armatus Becker, 1910 : 22. Originally described from Voi, in KENYA.

GARAMBA NATIONAL PARK : P.N.G., 1461, II/fc/18, 2 9, 28.iii.1951 ; 415, I/a/1, 1 9, 20.iii.1950 (IPNC).

Astochia strachani sp. n.

(Text-fig. 78)

Distinguished by the leg-pattern, and by the characteristic male genitalia (Textfig. 78). All femora are black on anterior face and dorsally, with a red ring basally, which is absent in related species *neavensis* Ricardo and *armatus* Becker ; posterior and ventral faces of femora reddish yellow.

6 Head. Black, obscured by thick tomentum. Tomentum of frons brassy, including ocellar tubercle; 2 long ocellar bristles and 2-4 small ones, as well as vertical row along each eyemargin, all black. Face with more brownish white tomentum; facial tubercle low but long, ending abruptly about as far below antennae as length of first segment. Moustache black above, but mostly white; no other hairs on face. Occipital bristles very strong, black, one or two slightly proclinate at tip; occipital hairs and beard white. Antennae black, with black hairs. Palpi and proboscis black, with white hairs.

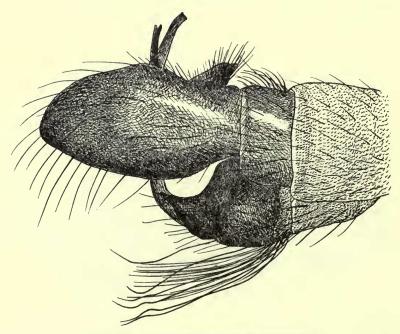


FIG. 78. Astochia strachani, & genitalia.

Thorax. Mesonotum entirely tomented : brownish grey, with the usual partially divided median stripes, reaching back to scutellum, and lateral stripes interrupted at transverse suture ; clothed with short, bristly black hairs, and strong, black bristles. Scutellum entirely grey, with white hairs, and two marginal black bristles. Pronotum brownish grey, with rather weak bristles, some of which are black, and with white hairs. Pleura grey, a little more brownish dorsally : bristles black in front of halteres, mostly yellowish elsewhere.

Abdomen. Dorsum grey, each segment with a median brown spot and a pair of lateral ones which become larger posteriorly. Clothing hairs mostly black and bristly, white ones laterally; each segment laterally with one or more strong white discal bristles, and on first tergite with a tuft of white hairs and a row or cluster of bristles, usually black. Venter brownish grey, with whitish hairs and bristles.

Legs. Coxae like pleura, with yellow or whitish hairs and bristles. Femora reddish yellow, posteriorly and ventrally, black anteriorly and dorsally, leaving a narrow reddish ring at base. Fore and middle tibiae and basitarsi reddish yellow, their tarsi otherwise dusky; hind tibiae dull reddish, more dusky in apical half, all hind tarsal segments dusky. Close, velvety, bright yellow fringe on interior surface of fore tibia extends on to two basal segments of tarsus.

Wings. Narrow. pointed. Marginal cell (3) broadened and ridged; vein R_{4+5} sinous. Infuscation of cells back to fifth posterior, and a little in discal cell. Halteres yellowish.

Q Closely similar, but marginal cell of wing not ridged.

Holotype J. NIGERIA : Lagos (G. Strachan) (BMNH).

Paratypes. Same data as holotype, $3 \ 3, 2 \ (BMNH)$; SIERRA LEONE : Nzala, 1 $\ 2, 23.iii.62$ (*M. F. Rushton*); COSTERMANSVILLE : Kasongo, 1 $\ 3, 3 \ 2, viii-ix.1959$ (*Dr. J. Claessens*); Kapiti, 2 $\ 3, 1 \ 2, iv.1912$ (*Miss. Agric.*); LOMAMI : Luputa, 1 $\ 3, ix.1935$ (*Dr. Bomans*); KATANGA : Elisabethville, route Sakania, 1 $\ 3, 21.viii.1952$ (*L. Remy*) (MRAC).

NEOITAMUS Osten-Sacken

Itamus Loew, 1849: 84 [Praeocc. Coleoptera]. Type-species : Asilus cyanurus Loew, 1849, by designation of Coquillet, 1910.

Neoitamus Osten-Sacken, 1878 : 82, 235.

Comments have already been made, under Astochia, about the difficulty of separating the two genera Astochia and Neoitamus. The following species seems more likely than the others to be properly placed in Neoitamus.

Neoitamus africanus Ricardo

Neoitamus africanus Ricardo, 1919: 73. Originally described from Mt Kenya.

STANLEYVILLE : Mahagi-Niarembe, 1 \heartsuit , x.1935 (*Ch. Scops*) ; KIVU : Kisenyi, 1 \heartsuit , ii.1928 (*Ch. Seydel*) ; Muturak 1 \heartsuit , 3.ii.1922 (*van Sacaghem*) ; RUANDA : Kisenyi, 1800 m, 1 \eth , 18.xi.1961 (*A. E. Bertrand*) (MRAC).

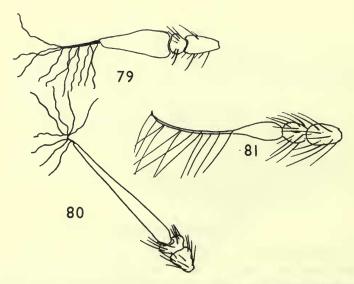
Tribe **OMMATHNI**

Members of this tribe are characterized by the plumed antennae, which have a ventral fringe of long hairs on the arista (Text-figs 79–81). It might be doubted whether this single character is sufficient to define a tribe, but the few genera comprised in Ommatiini are distinctive even when the antennae are broken. Hull

(1962:433) regards the chitinized postmetacoxal arch as a tribal character. These genera have much in common with certain genera of Asilini, notably *Neomochtherus* and *Heligmoneura*, but recognition of Ommatiini as a tribe is convenient.

In the genus Ommatius Wiedemann the antennae are similar to those of Asilini, with short, seedlike third segment, but with the addition of a ventral fringe on the arista. Cophinopoda Hull, 1958 segregates a small group of species that are distributed from Madagascar eastwards to China and Queensland. Michotamia Macquart, 1838 (Allocotosia Schiner, 1866) comprises a number of Oriental and Australian species which are characteristically either yellow or purple in colour, and in which the third antennal segment itself is elongate, with correspondingly shorter, fringed arista (Text-fig. 80). A single species from the Congo, described in the present paper, seemed at first to be the only African representative of Michotamia, but it later proved to be a new genus Thallosia, differing from Michotamia in the genitalia (which resemble those of Cophinopoda), and in having antennae that are intermediate between those of Michotamia and those of Ommatius (Text-fig. 79).

The genus Ommatius is one of the most difficult genera of Asilidae, in spite of the complex genitalia of many of the species. About fifty species occur in Africa south of the Sahara, and what is known of their distribution suggests that some species at least may occur over a wide area. For these reasons the present report of this genus has been confined to the species of Ommatius that actually occur within the Parc National du Garamba, leaving the larger and more diversified collection of Ommatius from the rest of the Congo Basin to form part of a projected revision of the African species of Ommatius, to be made at a later date.



FIGS 79-81. Tribe Ommatiini, antennae. 79, Thallosia ; 80, Michotamia ; 81, Ommatius.

THALLOSIA gen. n.

Type-species : Thallosia congoicola sp. n., by present designation.

Differs from the varied assortment of species of *Ommatius* in the head structure as a whole. Antennae as in Text-fig. 79, with the third segment and arista about equal in length to each other, and to the first two segments combined. Face with a distinct but small tubercle, occupying less than half of face, and bearing a sparse moustache of only a few strong bristles (Text-fig. 82). Occipital bristles strong, but few in number ; beard unusually sparse. Proboscis long, spade-like (i.e. dorsoventrally flattened) and arising from a stout base, which bears a small clump of strong bristles ventrally. Palpi cylindrical, with fine hairs.

Thorax with a strongly developed pronotum, with distinct 'collar'. Scutellum rather small, with a deep transverse furrow on its disc, and another immediately before scutellar suture. Male genitalia of the unique species remarkably like those of *Cophinopoda*, distinguished by the long, curved appendage to the upper forceps (epandrium) (Text-fig. 83).

Legs slender, without special features; pulvilli square at tip as in *Michotamia*. Wings rather broadly rounded at tip. Vein R_4 ending at, or shortly behind, wing-tip.

Thallosia congoicola sp. n.

(Text-figs 82, 83)

A mainly yellow species with distinctly patterned thorax. Male genitalia as in Text-fig. 83.

Head black in ground colour, 'frons with dark brown tomentum, including ocellar tubercle, but a small yellow patch just in front of this tubercle. Two black postocellar bristles, and a very few small frontal bristles, black. Face entirely covered with tomentum, which is whitish, a little brownish beneath antennae. Moustache confined to facial tubercle, consisting of only a few white hairs and bristles, and one or two black bristles dorsally. Extensive clypeal region (Text-fig. 82) bare, shining brown. Palpi cylindrical, shining black-brown, with yellowish hairs. Proboscis shining black, with a conspicuous clump of brown hairs ventrally near base. Antennae entirely yellow-brown with black bristles. Upper occiput with strong, moderately long, yellow bristles ; lower occiput with fine yellowish hairs, beard pale, unusually sparse.

Thorax entirely tomented. Mesonotum golden brown with a distinct pattern of darker brown, consisting of two widely separated longitudinal stripes, which end in middle of scutum and are succeeded by a single median stripe, and flanked by three well defined lateral spots. Scutellum yellowish brown, with sparse, stout yellow hairs but no marginal bristles. A few very strong black thoracic bristles : 2 notopleural, I supra-alar, I postalar, and one dorsocentral well ahead of scutellar suture ; only a few, sparse very fine black hairs aligned as dorsocentrals and acrostichals. Pleura covered with yellow tomentum, but bare of hairs except for a strong pteropleural bristle and weak bristles ahead of halteres.

Abdomen dorsally reddish brown, without pattern, but more yellow basally, especially on second segment. Hairs black dorsally, yellow laterally; hind margins of segments with longer, slender bristles, and laterally with at least one, quite strong, yellow bristle. Venter reddish yellow, with yellowish hairs. Male genitalia as in Text-fig. 83; upper forceps with long, curved process, recalling that found in *Cophinopoda* (Oldroyd, 1964).

Legs slender, entirely reddish yellow, except for slight darkening of last tarsal segment. Hind femora ventrally with a row of six short, black bristles.

Wings slightly and uniformly smoky. Marginal cell with a very short stalk ; stalk of fourth posterior cell long. Halteres reddish yellow.

Length of body 8 mm; of wing 8 mm.

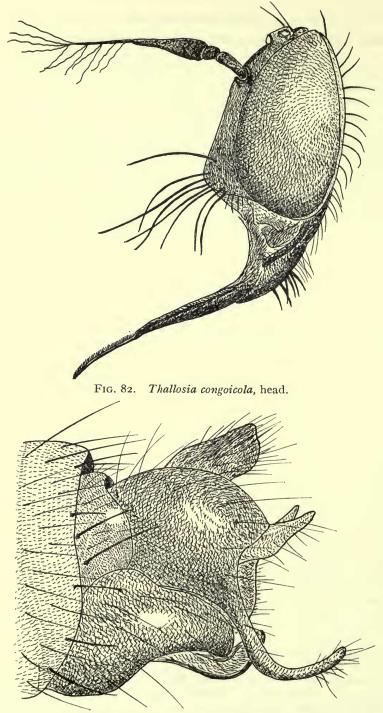


FIG. 83. Thallosia congoicola, 3 genitalia.

ASILIDAE OF THE CONGO BASIN

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 54, I/0/1, 10.V.1950 (IPNC). Paratype Q. UELE : van Kerkovenville (*Degreef*) (MRAC).

OMMATIUS Wiedemann

Ommatius Wiedemann, 1821: 213. Type-species: Asilus marginellus Fabricius, 1781, by designation of Coquillet, 1910.

Ommatinus Becker, 1925: 84. Type-species: Ommatius pinguis Wulp, 1872, by original designation.

This genus originally contained only three species, marginellus Fabricius, auratus Fabricius and fulvidus Wiedemann. The two last have been removed to other genera, auratus to Michotamia and fulvidus to Cophinopoda. The type-species, marginellus, is one of a great range of tropical species of Ommatius which can only be resolved by a more detailed study. The following are merely the species taken by the Mission H. De Saeger in the P. N. du Garamba.

Ommatius vittatus Curran

(Text-figs 84, 85)

Ommatius vittatus Curran, 1927: 13.

There is a complex of species related to *O. variabilis* Engel, and notable for the swollen hind femora of the males (Text-fig. 84). The exact number of species involved is obscure, but the present material clearly belongs to *vittatus* Curran, and should be known by that name until a study of the whole genus is possible.

GARAMBA NATIONAL PARK : P.N.G., 261, I/b/3, 1 9, 1.iii.1950 ; 469, I/a/1, 1 9, 1.v.1950 (G. Demoulin) ; 457, I/3/3, 1 \bigcirc , 8.v.1950 ; 585, I/a/M, 1 3, 2 \bigcirc , 7.xi.1950 (G. Demoulin) ; 789, Napukumweli, 1 \bigcirc , 26.viii.1950 (G. Demoulin) ; 998, I/I/d, 1 9, 21.xii.1950 (J. Verschuren) ; 1458, II/fc/5, 1 3, 27.iii.1951 ; 1525, II/gf/4, 1 9, 10.iv.1951 ; 1527, II/gd/4, 1 3, 2 9, 13.iv.1951 ; 1576, II/CH/4, 2 3, 1 9, 19.iv.1951 (J. Verschuren); 1588, II/hc/4, I Q, 20.iv.1951 (J. Verschuren); 1645, II/gc/11, 1 Q, 4.v.1951 ; 1798, II/fd/15, 2 δ, 1 Q, 24.v.1951 ; 1824, II/fd/17, 1 Q, 28.v.1951 ; 1872, II/hc/8, 1 3, 5.vi.1951; 1886, II/gc/6, 1 3, 1 9, 8.vi.1951; 1920, II/gd/8, 1 9, 16.vi.1951; 2015, II/gc/6, 3 J, 4 9, 29.vi.1951; 2024, II/gd/14, 1 J, 30.v.1951; 2056, II/fd/17, 1 9, 9.vii.1951 ; 2072, II/fd/6, 1 9, 13.vii.1951 ; 2158, II/gc/8, 4 9, 27.vii.1951 ; 2225, II/fd/15, 2 9, 7.viii.1951 ; 2243, II/gc/6, 1 3, 9.viii.1951 ; 2290, II/fd/6, I J, I Q, 23.viii.1951 ; 2361, II/gc/13s, I J, ix.1951 ; 2395, II/fd/18, I J, 8.ix.1951 ; 2448, II/gd/7, I Q, 20.iv.1951 ; 2456, II/fd/15, 8 3, 2 Q, 21.ix.1951 ; 2521, II/gc/11, 2 &, 3 Q, 5.x.1951; 2575, II/fc/6, 1 &, 10.x.1951; 2653, II/fc/18, 1 3, 12.x.1951; 2699, II/fc/6, 4 9, 30.x.1951; 2740, II/gd/9, 1 9, 8.xi.1951; 2774, II/fc/135, 1 3, 21.xi.1951 ; 2506, II/fc/18, 1 3, 1 \bigcirc , 24.xi.1951 ; 2881, II/fc/14, 1 \bigcirc , 10.xii.1951 ; 2935, II/fd/10, 2 \bigcirc , 20.xii.1951 ; 2941, II/fc/6, 7 3, 14 \bigcirc , 26.xii.1951 ; 3287, II/gc/6, 2 3, 9 9, 5.iv.1952 ; 3399, II/gc/11, 3 3, 1 9, 29.iv.1952 ; 3424, II/fd/7, 1 φ , 5.v.1952 ; 3429, II/fd/18, 1 φ , 6.v.1952 ; 3567, II/hd/6, 4 \Im , 9 φ , 30.v.1952 ; 3623, Iso II/2, 1 φ , 18.iv.1952 ; 3656, PPSK 5/3, 1 \Im , 20.vi.1952 ; 3678, Ndelele/4, 1 \Im , 18.vi.1952 ; 3729, II/fc/7, 1 \Im , 2 φ , 4.vii.1952 ; 3811, Utukura/4, 1 φ , 22.vii.

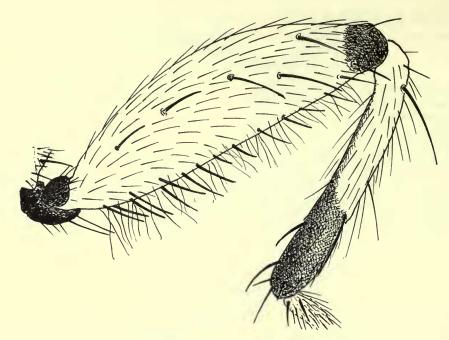


FIG. 84. Ommatius vittatus, 3 hind femur and tibia.



FIG. 85. Ommatius vittatus, Q hind femur and tibia.

1952 ; 3844, Mt. Moyo, I 3, 29.vii.1952 ; 3963, II/gc/6, I 3, 21.viii.1952 ; 3964, II/gd/4, I 3, 22.viii.52 ; 3878, II/gc/10, I 3, 4.viii.1952 ; 3884, II/fd/12, I 3, 5.viii. 1952 ; 3940, II/gc/7, I 3, I \heartsuit , 14.vii.52 ; 3952, II/gd/6, 2 \heartsuit , 19.viii.52 ; 4042, II/gc/8, I \heartsuit , 9.ix.1952 ; 4057, II/gc/7, I \heartsuit , 16.xi.1952 (IPNC).

Ommatius macroscelis Bezzi

Ommatius macroscelis Bezzi, 1906: 292 (Ditterei Eritrei); Oldroyd, 1939: 433; Lindner, 1955: 44.

This is a very distinctive little species, easily recognized by its black colour, with white tomentum on pleura and dorsally on abdomen, especially in the male. The most characteristic feature is the row of short, mostly black, spines ventrally on the hind femora.

GARAMBA NATIONAL PARK : P.N.G., 63, I/b/3, I &, 21.xii.1949 ; 308, Mt. Ndogo, 1 3, 1 9, 15.iii.1950 ; 422, I/a/3, 6 3, 4 9, 17.iv.1950 (G. Demoulin) ; 441, Akam, 2 3, 21.iv.1950 ; 456, I/b/1, I 3, I 2, 12.iv.1950 ; 467, I/b/1, I 3, I 2, 26.iv.1950 (G. Demoulin); 479, I/0/1, 1 &, 4.v.1950 (G. Demoulin); 483, I/a/1, 2 &, 2 &, 5.v. 1950 (G. Demoulin); 529 Akam, 1 3, 19. vii. 1950; 508, I/0/1, 1 9, 7. ix. 1950 (G. Demoulin) ; 999, II/c, I Q, 21. xii. 1950 (J. Verschuren) ; 1494, II/fd/17, I J, 4. iv. 1951; 1537, II/gc/7, 2 3, 14.iv.1951; 1566, II/gd/4, 1 3, 17.iv.1951 (J. Verschuren); 1576, II/fb/4, 32, 19.iv.1951 (J. Verschuren); 1588, II/fc/4, 3 3, 2 9, 20.iv.1951 (J. Verschuren); 1590, II/fc/4, 3 3, 2 9, 20.iv.1951 (J. Verschuren); 1590, II/c/4, 2 3, 2 9, 20.iv.1951 (J. Verschuren); 1613, II/hc/4, 1 3, 24.iv.1951 (J. Verschuren); 1618, II/gd/4, 2 3, 2 9, 25.iv.1951 (J. Verschuren); 1645, II/gc/11/ 3 3, 2 9, 4.v. 1951; 1671, II/fd/17, 1 ♂, 8.v.1951; 1700, II/gd/8, 1 ♂, 1 ♀, 9.v.1951; 1772, II/fc/17, 11 &, 5 &, 22.iv.1951; 1811, II/fb/11, 1 &, 1 &, 25.v.1951 (J. Verschuren); 1824, II/fd/17, 2 Q, 28.v.1951; 1855, II/gc/4, 1 3, 3 Q, I.vi.1951; 1866, II/hc/8, 1 φ , 4.vi.1951 ; 1867, II/gc/6, 1 \Im , 1 φ , 4.vi.1951 ; 1876, II/gd/14, 2 \Im , 6.vi.1951 ; 1886, II/gc/6, 1 φ , 8.vi.1951 ; 1887, II/gd/7, 2 \Im , 2 φ , 8.vi.1951 ; 1919, II/gd/8, 2 3, 3 9, 16. vi. 1951 ; 2015, II/gc/6, 3 9, 29. vi. 1951 (J. Verschuren) ; 2052, II/gd/4, 2 3, 1 9, 5.vii.1951 ; 2055, II/gd/4, 1 9, 6.vii.1951 ; 2496, II/nd/4, 1 3, 2.x.1951 ; 2615, PpK. 52g, 2 3, 1 9, 16.x.1951, II/gc/9, 2 9, 20.x.51; 2860, PpK. 90/115, 1 &, 3.xii.1951 ; 2653, II/fc/18, 1 &, 12.x.1951 ; 2668, II/fd/4, 2 &, 1 9, 24.x.1951 ; 2680, PpK/55, I &, 3 Q, 26.x.1951; 2697, II/fd/16, I &, I Q, 29.x.1951; 2699, II/fc/6, I J, 30.X.1951; 2708, II/id/8, 2 J, 31.X.1951; 2724, PpK.80.90., 12 J, 11 Q, 5.xi.1951 ; 2731, II/gd/4, 7.xi.1951 ; 2757, II/gc/11, 2 J, 13.xi.1961 ; 2773, PpK/55, 2 3, 19.xi.1961; 2774, II/gc/13s, 1 3, 21.x.1951; 2780, II/gd/4, 1 9, 23.xi.1951; 2806, II/fc/18, 8 3, 10 9, 24.xi.1951; 2814, II/fd/16, 2 3, 28.xi.1951; 2818, II/fc/17, 2 3, 1 9, 29.xi.1951 ; 2831, II/gd/4, 1 9, 30.xi.1951 ; 2860, PpK, 90/115, 1 3, 3.xii.1951 ; 2881, II/fc/14, 1 3, 3 9, 10.xii.1951 ; 2882, II/gc/10, 1 9, 11.xi.1951 ; 2910, II/fd/17, 3 3, 2 9, 14.xii.1951 ; 2917, II/gc/15, 1 3, 3 9, 17.xii. 1951; 2935, II/fd/10, 3 3, 2 9, 20.xii.1951; 2939, II/fd/18, 1 9, II/fd/18; 2941, II/fc/6, I 3, I 9, 26.xii.1951 (J. Verschuren); 3262, II/fc/18, I 9, 31.iii.1952; 3311, PpK 73/d/9, 2 3, 2 9, 8.iv.52; 3399, II/gc/11, 2 3, 1 9, 29.iv.1952; 3410, II/gd/4, 2 3, 2 9, 2.V.1962; 3424, II/fd/7, I 3, 5.V.1952; 3429, II/fc/18, I 9, 8.V.

1952 ; 3461, Inimvua, 1 \bigcirc , 16.v.1952 ; 3476, Aka/2, 2 \bigcirc , 19.v.1952 ; 3480, Inimvua, 1 \eth , 16.v.1952 ; 3514, Aka/2, 1 \bigcirc , 22.v.1952 ; 3964, II/fd/4, 1 \bigcirc , 3.vi.1952 ; 3701, II/gd/1, 1 \bigcirc , 24.vi.1952 ; 4100, Iso III, 1 \circlearrowright , 26.ix.1952 (IPNC).

Ommatius macquarti Bezzi

(Text-fig. 86)

Ommatius macquarti Bezzi, 1908 : 379.

Easily recognized by the bulbous male genitalia (Text-fig. 86), but extremely variable in size and general stature.

GARAMBA NATIONAL PARK : P.N.G., 213, I/2/3, 1 3, 20.ii.1950 ; 414, I/b/3, 1 3, 414, I/b/3, 1 3, 14.iv.1950 ; 529, Akam, 1 9, 19.v.1950 ; 1890, II/fd/17, 1 9, 11.vi. 1951 ; 1916, II/fd/1, 1 3, 15.vi.1951 ; 1960, II/fd/17, 1 9, 25.vi.1951 (IPNC).

The collection of the Musée R. de l'Afrique centrale contains many examples of this species, which will be considered later in a generic revision.

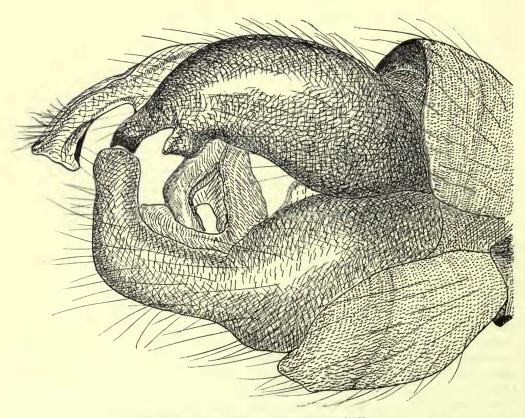


FIG. 86. Ommatius macquarti, 3 genitalia.

Ommatius digittatus sp. n.

(Text-figs 87-89)

A small, delicate species, with slender abdomen and yellow legs ; distinguished in the male by the characteristic genitalia (Text-fig. 87).

c Head. Eyes rather widely separated. Frons entirely covered with dark chocolate-brown tomentum, with several long, proclinate, black occipital bristles, and with long black hairs along eye-margins. Face with dense yellow tomentum, only slightly rounded in profile, without any distinct tubercle ; moustache with white or yellowish hairs and bristles near mouth-margin, and continued up to bases of antennae by a double row of black bristles, flanked with slender black hairs. Antennae black, with some black and some yellow hairs and bristles ; third segment short, little longer than first. Occipital bristles black and strongly proclinate ; lower occipital bristles and beard yellowish.

Thorax. Mesonotum entirely tomented, without definite pattern, though anteriorly and medially it is darker than postero-laterally. Thoracic bristles longer than usual, mostly yellow ; 2 notopleural, I supra-alar, sometimes one or two dorsocentrals; fine hairs in positions of dorsocentrals, acrostichals, humeral and lateral areas are also exceptionally long and fine, longer than total of three antennal segments. Scutellum grey, with long, curved yellow hairs on disc, and several bristly yellow hairs, but no strong bristles, on margin. Pronotum and pleura grey, with entirely yellow hairs and bristles; bristles are present on pronotal collar, and before halteres, and in a vertical row on posterior margin of mesopleuron.

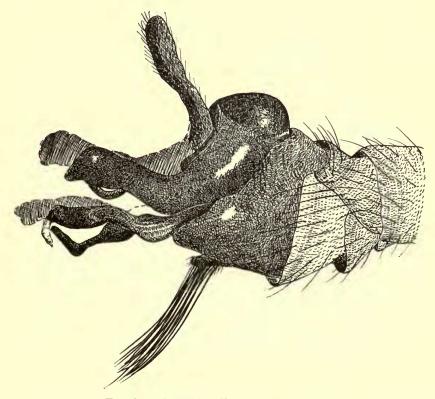


FIG. 87. Ommatius digittatus, 3 genitalia.

Abdomen. Tergites densely covered with velvety tomentum, which alters in tone according to the direction of the light, and almost conceals dull yellow hind margins of segments. Hairs entirely golden yellow, longer and more bristly laterally, with a clump of strong yellow bristles on each side of first segment. Sternites yellowish grey, with a few fine hairs, but with an array of strong yellow bristles in a characteristic pattern (Text-fig. 89). From seventh sternite onwards abdomen is darker brown both dorsally and ventrally, and ends in very distinctive male genitalia (Text-fig. 87).

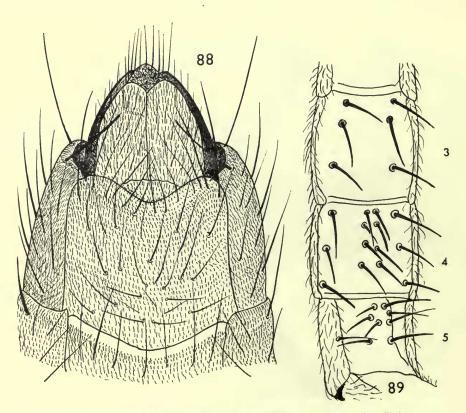
Legs. Coxae and trochanters black with grey tomentum. Legs otherwise clear yellow down to tip of basitarsus; rest of tarsi black. Hairs and bristles long, slender, entirely yellow except towards tips of tarsi, where short bristles are black.

Wings. Very narrow and elongate ; radial fork bell-mouthed, straddling wing-tip ; fourth posterior cell with long petioles both basally and apically. Halteres pale yellow knob on a grey stalk.

Length of body 9 mm; of wing 5 mm.

 \bigcirc Generally resembles male, except that sternites lack the pattern of strong bristles ; tergites with one strong yellow bristle on each side, in posterior angle ; \bigcirc genitalia as in Text-fig. 88.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 4103, Mabanga, 29.ix.1952 (IPNC).



FIGS 88-89. 88, Ommatius digittatus, ♀ genitalia ; 89, Ommatius digittatus ♂, abdominal sternites with bristles (cf. fig. 93).

Paratypes. P.N.G., I J, I Q, 26.iv.1950 (G. Demoulin) ; 497, I/a/3, I J, 8.v.1950 ; 657, I/O/I, I Q, 30.iii.1950 (G. Demoulin) ; 812, I/o/I, I Q, ii.ix.1950 (G. Demoulin) ; 866, I/o/2, 2 J, I Q, 3.x.1950 (G. Demoulin) ; 898, I/o/2, I J, 20.x.1950 ; 2479, II/gc/6, I Q, 27.ix.1951 ; 2554, II/fd/18, I Q, 8.x.1951 ; 2680, PpK/35, I Q, 28.x. 1951 ; 2699, II/fc/6, I J, I Q, 30.x.5I ; 3197, Anie /9, I J, I Q, 18.iii.1952 ; 3399, II/gc/II, I J, I Q, 29.iv.1952 ; 3583, Garamba/2 (source), I Q, 6.v.1952 ; 3589, Ndelele/2, I Q, 6.vi.1952 ; 3678, Ndelele/4, 2 J, 2 Q, 18.vi.1952 ; 3743, II/gd/4, I Q, 5.vii.1952 ; 3763, II/fd/17, I J, 9.vii.1952 ; 4101, Pali /8, 2 J, 2 Q, 27.ix.1952 (IPNC).

Ommatius garambensis sp. n.

(Text-fig. 90)

Apparently one of the *vittatus-variabilis* group of species, but distinguished from others by the male genitalia (Text-fig. 90), with the square-tipped upper forceps, and by the colour of the femora, which are black with a dorsal or postero-dorsal reddish stripe.

 \mathcal{F} Head. Frons and face relatively broad, narrowest at vertex, broadest at mouth-margin. Frons with brassy brown tomentum over a black ground; ocellar tubercle shining black dorsally, with short black hairs on each side; a single pair of black postocellar bristles on each side; a single pair of black ocellars. Tomentum of frons paler, more yellowish; facial tubercle occupying lower third of face, with a strong moustache of mainly black bristles, with white hairs and bristles on mouth-margin. Antennae black, with black hairs and bristles ; proboscis and palpi black with whitish hairs. Upper occipital bristles strong and black, lower occiput and beard with white hairs.

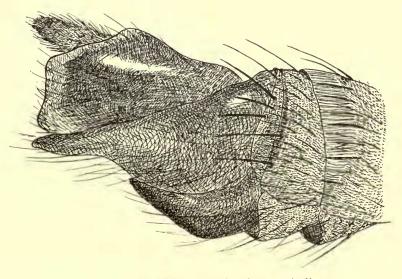


FIG. 90. Ommatius garambensis, 5 genitalia.

Thorax. Mesonotum with ashy grey and brown tomentum, giving a moderately distinct pattern of two longitudinal stripes and two lateral spots on each side. Bristles and hairs black : 2 notopleurals, I supra-alar, 3-6 dorsocentrals; fine black hairs along lines of dorsocentrals and acrostichals, spreading into large lateral areas above wings. Scutellum uniformly yellowish grey, with pale discal hairs, and two strong black marginal bristles. Pronotum and pleura with grey tomentum. Pronotum with a collar of black bristles; one strong black pteropleural bristle, and a vertical row of black bristles before halteres; mesonotum unusually hairy, with long, fine, black hairs.

Abdomen. Tergites with dull yellow posterior margins; clothed with short, black hairs, which become yellowish and longer laterally; no distinct strong bristles except on first tergite. Sternites similar, hairs pale.

Legs. Coxae black in ground colour, with grey tomentum and white hairs ; middle and hind coxae each with a single, strong, yellow bristle externally. Femora black, with a dorsal reddish stripe, which may extend into an apical ring, and on to ventral surface, especially on fore and middle femora. Clothing hairs of femora black anteriorly on fore and middle legs, white posteriorly, and on entire hind femora. Fore femora without strong bristles ; middle and hind femora with very strong black bristles on anterior face, and in a ventral row on hind femora. Fore and middle tibiae and tarsi reddish yellow, with black tips to segments ; hind legs with only basal half of tibiae reddish yellow ; rest, including entire tarsi, black. Bristles mixed black and yellow.

Wings uniformly pale greyish; marginal cell a little ridged, but not strongly dilated on costal margin; radial fork bell-mouthed, vein R_4 ending distinctly before wing-tip. Halteres brown.

Length of body 14 mm ; of wing 11 mm.

♀ Generally similar, but larger areas of reddish colour on legs.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 3277, PpK, 51/g/a, 2.iv.52 (IPNC).

Paratypes. Same data as holotype, 63, 39; 808, I/0/1, 7.ix.1950 (G. Demoulin); 2056, II/fd/17, 19, 9.vii.1961; 2242, II/fd/17, 19, 13.viii.1951; 2341, II/fd/17, 19, 31.viii.1951; 2814, II/fd/16, 19, 28.xi.1951; 2839, II/fd/18, 19, 21.xii.1951; 3262, II/fc/18, 13, 31.iii.1952 (IPNC).

Ommatius caligula sp. n.

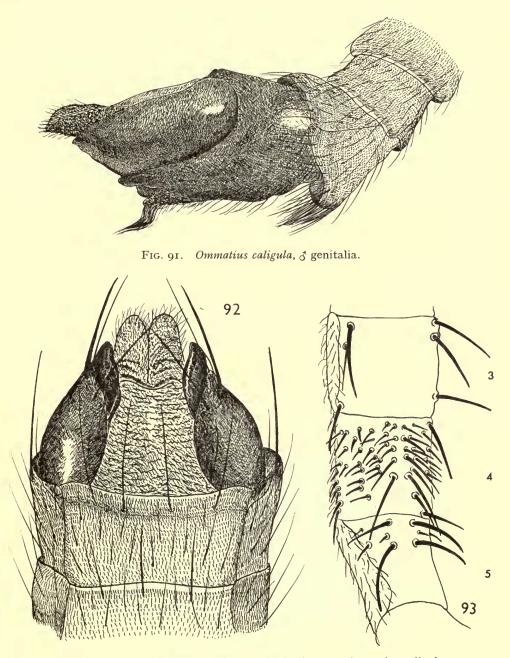
(Text-figs 91-93)

Superficially resembling *digittatus* sp. n., but distinguished in both sexes by the genitalia, and in the males by the arrangement of strong bristles on sternites 3, 4, 5 of the abdomen (Text-fig. 93). From *drusus* sp. n., both *digittatus* and *caligula* are distinguished by having the femora and tibiae entirely reddish yellow.

& Head. Eyes rather widely separated. Frons dark velvety brown, with slender, black hairs on ocellar tubercle, and along eye-margins. Face gently rounded, without definite tubercle, densely covered with yellow tomentum. Moustache extensive, covering most of face, and extending almost to bases of antennae ; rather sparse, composed of a mixture of black and yellow bristles and hairs. Antennae black, with velvety brown tomentum and black hairs ; third segment almost as short as second. Palpi and proboscis black with yellow hairs. Bristles of upper occiput black, fine, strongly proclinate, with fine black hairs medially ; lower occiput and beard with fine, sparse, white hairs.

Thoraz. Black with rather thin, golden brown tomentum. Mesonotum more brown anteriorly, becoming grey posteriorly and on scutellum, but without definite pattern; a little paler brown near humeri. Bristles mostly white, but occasionally black: 2 notopleural, I

supra-alar, I postalar ; a single pair of dorsocentrals conspicuous in a row of fine dorsocentral hairs, black anteriorly, yellow posteriorly ; a few fine black acrostichals. Scutellum grey,



FIGS 92-93. 92, Ommatius caligula, \bigcirc genitalia ; 93, Ommatius caligula, abdominal sternites with bristles (cf. fig. 89).

with fine, yellowish discal hairs, and two long, yellow, marginal bristles. Pleura with thin, golden brown tomentum on dorsal half and whitish tomentum ventrally. Hairs and bristles mostly yellowish; a distinct pteropleural bristle, and a vertical row posteriorly on mesopleuron, as well as before halteres.

Abdomen dorsally with dense brown tomentum, more greyish anteriorly, more reddish brown posteriorly, with fine yellow hairs becoming more bristly laterally, but without true bristles on tergites. Sternites 4, 5 bare, shining, others covered with tomentum. A remarkable arrangement of strong yellow bristles : a single pair on segment 2 and an arrangement on segments 3, 4, 5 as shown in Text-fig. 93.

Male genitalia very long, shining black, shaped as in Text-fig. 91.

Legs. Coxae like pleura, trochanters black. Femora entirely reddish yellow : fore femora ventrally with a row of about 4 powerful yellow bristles. Tibiae and basitarsi also reddish yellow, tarsi then becoming progressively darker.

Wings. Uniformly greyish, with a coating of microtrichiae. Halteres reddish brown.

Length of body 7 mm ; of wing 6 mm.

Q closely resembles male, except that ventral bristles on abdomen—evidently a secondary sexual character—are much less strongly developed. Female genitalia as in Text-fig. 92, eighth tergite strongly convex and overlapping sternite, giving this species a distinctive appearance.

Holotype J. GARAMBA NATIONAL PARK : P.N.G., 3678, Ndelele /4, 18.vi.1952 (IPNC).

Paratypes. Same data as holotype, 2 3, 7 9; 2680, 2 9; 3488, PpK/55, 3 9, 20.v.1952 (IPNC).

Ommatius canicoxa Speiser

(Text-fig. 94)

Ommatius canicoxa Speiser, 1913: 142.

GARAMBA NATIONAL PARK : P.N.G., 199 I/a/3, 1 Q, 7.ii.1950 ; 213, I/a/3, 1 Q, 20.ii.1950 ; 395, I/o, 1 J, 27.ii.1950 ; 528, 529, Akam, 1 J, 2 Q, 19.v.1950 ; 832, I/O/2, 1 J, 2 Q, ix.1950 ; 3476, Aka/2, 1 J, 19.v.1952 (IPNC).

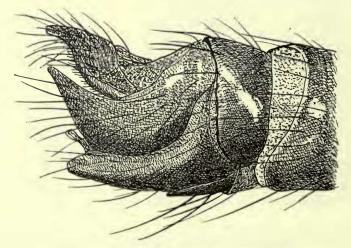


FIG. 94. Ommatius canicoxa, 5 genitalia.

O. canicoxa Speiser was described from the Kamerun, near Duala, and as far as can be decided from the description alone, it is represented in the BMNH by a small series from the Cameroons and Nigeria. The material agrees with Speiser's description in the general colouring, and in particular in the wings, which are brownish antero-apically, and have the costal margin dilated. [die Ausbuchtung des Vorderrandes, welche vielen *Ommatius*-Arten zukommt. . . .]

East African specimens resembling these were recorded by Oldroyd (1939:42) and by Lindner (1955:44), with a note of interrogation. Although there is considerable individual variation in chromatic characters as well as in size, it seems possible to distinguish two species by the dilation or not of the costal margin in the male, and in both sexes by the extent of the reddish base of the hind femora. Both species occur in the present collection; those listed immediately above are the specimens believed to be true *canicoxa*, and the others, including Oldroyd's and Lindner's specimens, are referred to a new species, *Ommatius drusus* sp. n.

Ommatius drusus sp. n.

(Text-figs 95, 96)

Ommatius sp. near *canicoxa* Speiser ; Oldroyd, 1939 : 41. *Ommatius* aff. *canicoxa* Speiser ; Lindner, 1955 : 44.

Closely similar to *canicoxa* Speiser, and with almost identical male genitalia (Text-figs 94, 95), but distinguished by not having the costal margin of the wing noticeably dilated, and usually by having the hind femora dimidiate, i.e. divided in the middle into a reddish yellow basal half, and a black apical half, with oblique border between the two colours.

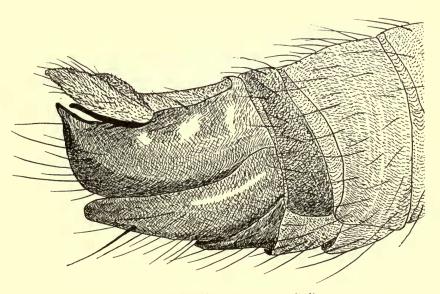


FIG. 95. Ommatius drusus, 3 genitalia.

d Head. Frons narrower than in canicoxa, vertex less deeply excavated ; tomentum of frons light golden brown, ocellar tubercle shining black, prominent, and with two very strong black bristles ; hairs along eye-margins extremely small and inconspicuous ; face high and narrow, tomentum pale yellowish, moustache white on mouth-margin, extended towards antennae as two rows of black bristles. Antennae black, with black bristles ; third segment short. Proboscis and palpi black with yellow hairs. Upper occipital bristles black, proclinate ; lower occipital bristles and scanty beard whitish.

Thorax. Mesonotum rust-brown, more yellowish on shoulders and posteriorly, but without definite pattern. Strong black bristles: 2 notopleurals, I supra-alar, I postalar, 3 pairs of weak dorsocentrals. Scutellum with brassy yellow tomentum, weak and indistinct pale discal hairs, and one pair of black marginal bristles. Pronotum brownish medially, laterally pale yellowish like pleura; pronotal collar of weak black bristles; pleura with fine, pale, yellow hairs and stout black bristles, including a pteropleural bristle.

Abdomen. Dorsally cinereous, with dull reddish posterior margins to segments. Clothing hairs black, longer on hind margins, replaced laterally by yellowish hairs and one or more long marginals. Venter similar, with fine, yellow hairs. Male genitalia as in Text-fig. 95, black, but sometimes reddish.

Legs. Coxae somewhat yellowish in ground colour, with yellow hairs and bristles. Trochanters reddish. Femora reddish yellow with black markings : fore and middle femora black anterodorsally; hind femora black apico-dorsally, with an oblique line of division between black and reddish areas (extent of colour varies, as well as distinctness of division between the two areas). Fore and middle tibiae and basitarsi reddish, with black tips; a dorsal black stripe on tibiae and segments 2-5 of tarsi black. Hind tibiae reddish on basal half, blackish apically, tarsi blackish.

Wings. Costal margin not appreciably dilated ; sometimes only dark brown over a small stigmal area, otherwise mostly pale greyish as a result of microtrichiae which cover all cells except second basal. Halteres with yellowish stalk and deep red knob.

Length of body 10 mm ; of wing 9 mm.

 \Im Similar to male ; \Im genitalia Text-fig. 96.

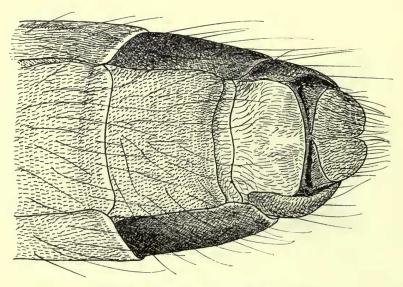


FIG. 96. Ommatius drusus, 9 genitalia.

Holotype J. UGANDA : Namwamba Valley, 6500 ft (F. W. Edwards) (BMNH).

Paratypes. Same data as holotype, $3 \ \varphi$; UGANDA : Budongo Forest, $1 \ \varphi$; Kilembe, 4500 ft, $4 \ \beta$, $4 \ \varphi$; Mobuka Valley, c. 4000 ft, $1 \ \beta$, $2 \ \varphi$; Mbarara, $1 \ \varphi$ (all coll. *F. W. Edwards*) Kyarumba, 4500' (*D. R. Buxton*), $3 \ \varphi$; Nyamgasani Valley, 6400' (*D. R. Buxton*), $1 \ \varphi$ (BMNH).

GARAMBA NATIONAL PARK : P.N.G., 456, I/b/1, 1 3, 12.iv.1950 (G. Demoulin) ; 527, I/)/1, 1 3, 1 \bigcirc , 17.v.1950 ; 3197, Anie/9, 1 \bigcirc , 18.iii.1952 ; 3229, BESK, 8/d/9, 1 \bigcirc , 25.iii.1952 ; PpK, 73/d/9, 1 \bigcirc , 8.iv.52 ; 3463, Aka, 1 \bigcirc , 15.v.1952 ; 3476, Aka/2, 1 3, 19.v.1952 ; II/fd/17, 1 3, 27.viii.52 (IPNC).

Ommatius ?longipennis Lindner

Ommatius longipennis Lindner, 1955: 45.

GARAMBA NATIONAL PARK : P.N.G., 3480, Inimvua, 1 3, 16.v.1952 ; 3844, Mt. Moyo, 1 Q, 29.vii.52 (IPNC).

UELE : Aba, 1 3, 20. iv. 1914 (Dr. Rodhain) (MRAC).

This species is very variable in the colour of the hind femora. It is provisionally identified with *longipennis* Lindner, though no information is given in Dr. Lindner's description about the genitalia. Confirmation of this identification must await a fuller study of the genus *Ommatius* in Africa.

Ommatius imperator Oldroyd

Ommatius imperator Oldroyd, 1939: 45.

UELE : Bambesa, I ♂, I ♀, IO.X.1933 (J. Leroy) (MRAC).

This species was described by me many years ago from specimens collected in Uganda by Neave and by T. H. E. Jackson. As far as I am aware, this is the first time that any other specimens have been noted, and so I record them in this paper.

O. imperator is perhaps the most striking species of the genus Ommatius, having the black body and yellow, black-tipped wings that are common to a whole complex of aposematic insects of various Orders.

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HAROLD OLDROYD Department of Entomology BRITISH MUSEUM (NATURAL HISTORY) CROMWELL ROAD LONDON, S.W.7

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